Bahamas Maritime Authority

Report of the investigation into the loss of the Bahamian registered tanker "Prestige" off the northwest coast of Spain on 19th November 2002

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FOREWORD

The investigation into the sinking of the Bahamian tanker Prestige was conducted under the provisions of the Bahamas Merchant Shipping Act.

The Bahamas Maritime Authority investigates incidents at sea for the purpose of discovering lessons which may be learned with a view to preventing any repetition. It is not the purpose of the investigation to establish liability or to apportion blame, except in so far as it emerges as part of the process of investigating the incident.

It should be noted that section 170(2) of the Merchant Shipping Act requires officers of a ship involved in an accident to answer an Inspector's questions fully and truthfully. If the contents of a report were subsequently submitted as evidence in court proceedings relating to an accident this would offend the principle that a person cannot be required to give evidence against himself. The Bahamas Maritime Authority makes this report available to interested parties on the strict understanding that it will not be used as evidence in any court proceedings anywhere in the world.

A number of tentative conclusions have been reached based on the best available information at the time of publishing this report. If, subsequent to publication, further relevant information is received which justifies modifying those conclusions, a supplement to this report may be produced.

A draft of this report was circulated to interested parties asking for comments. A number of recipients responded with helpful corrections to factual statements, views and opinions on the contents of the report and drawing attention to additional sources of information considered to be relevant to the inquiry. All comments were given full consideration and, where appropriate, amendments have been incorporated into the report.

CONTENTS

L. Spanish Court Documents

GLOSSARY OF ABBREVIATIONS

ABS	- AMERICAN BUREAU OF SHIPPING
BMA	- BAHAMAS MARITIME AUTHORITY
BEAmer	- BUREAU D'ENQUETES ACCIDENTS MER (FRENCH SHIPPING ACCIDENT INVESTIGATION BUREAU)
BV	- BUREAU VERITAS
CBT	- CLEAN BALLAST TANK
COW	- CRUDE OIL WASHING
EEZ	- EXCLUSIVE ECONOMIC ZONE
EPIRB	- EMERGENCY POSITION-INDICATING RADIO BEACON
ESP	- ENHANCED SURVEY PROGRAMME
GMDSS	- GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM
GPS	- GLOBAL POSITIONING SYSTEM
IACS	- INTERNATIONAL ASSOCIATION OF CLASSIFICATION SOCIETIES
INMARSAT C	- INTERNATIONAL MARITIME SATELLITE - SYSTEM C
INTERTANKO	- INTERNATIONAL TANKER OWNERS ASSOCIATION
UR Z10.1	- IACS UNIFIED REQUIREMENT Z10.1
IOPP CERTIFICATE	- INTERNATIONAL OIL POLLUTION PREVENTION CERTIFICATE
IMO	- INTERNATIONAL MARITIME ORGANIZATION
ISM	- INTERNATIONAL SAFETY MANAGEMENT CODE (SOLAS CHAPTER IX)
MARPOL	- INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS 1973 AS MODIFIED BY THE PROTOCOL OF 1978
MF/HF DSC	- MEDIUM FREQUENCY/HIGH FREQUENCY DIGITAL SELECTIVE CALLING
MMSI	- MARITIME MOBILE SERVICE IDENTITY NUMBER
MRCC	- MARINE RESCUE COORDINATION CENTRE
MRSC	- MARINE RESCUE COORDINATION SUB-CENTRES
RPM	- REVOLUTIONS PER MINUTE
SASEMAR	- SOCIEDAD DE SALVAMENTO Y SEGURIDAD MARITIMA (SPANISH MARITIME SEARCH AND RESCUE SERVICE)
SAR	- SEARCH AND RESCUE
SIRE	- SHIP INSPECTION REPORT (FOR OIL COMPANIES INTERNATIONAL MARINE FORUM)
SOLAS	- INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA 1974 AS AMENDED
S-N Curves	- STRESS-NUMBER OF CYCLES CURVES

STCW	- STANDARDS OF TRAINING CERTIFICATION AND WATCHKEEPING CONVENTION 1978 AS AMENDED
STS	- SHIP TO SHIP TRANSFER
TSS	- TRAFFIC SEPARATION SCHEME
UNCLOS	- UNITED NATIONS CONVENTION ON THE LAW OF THE SEA
UTC	- UNIVERSAL TIME COORDINATES
VHF	- VERY HIGH FREQUENCY

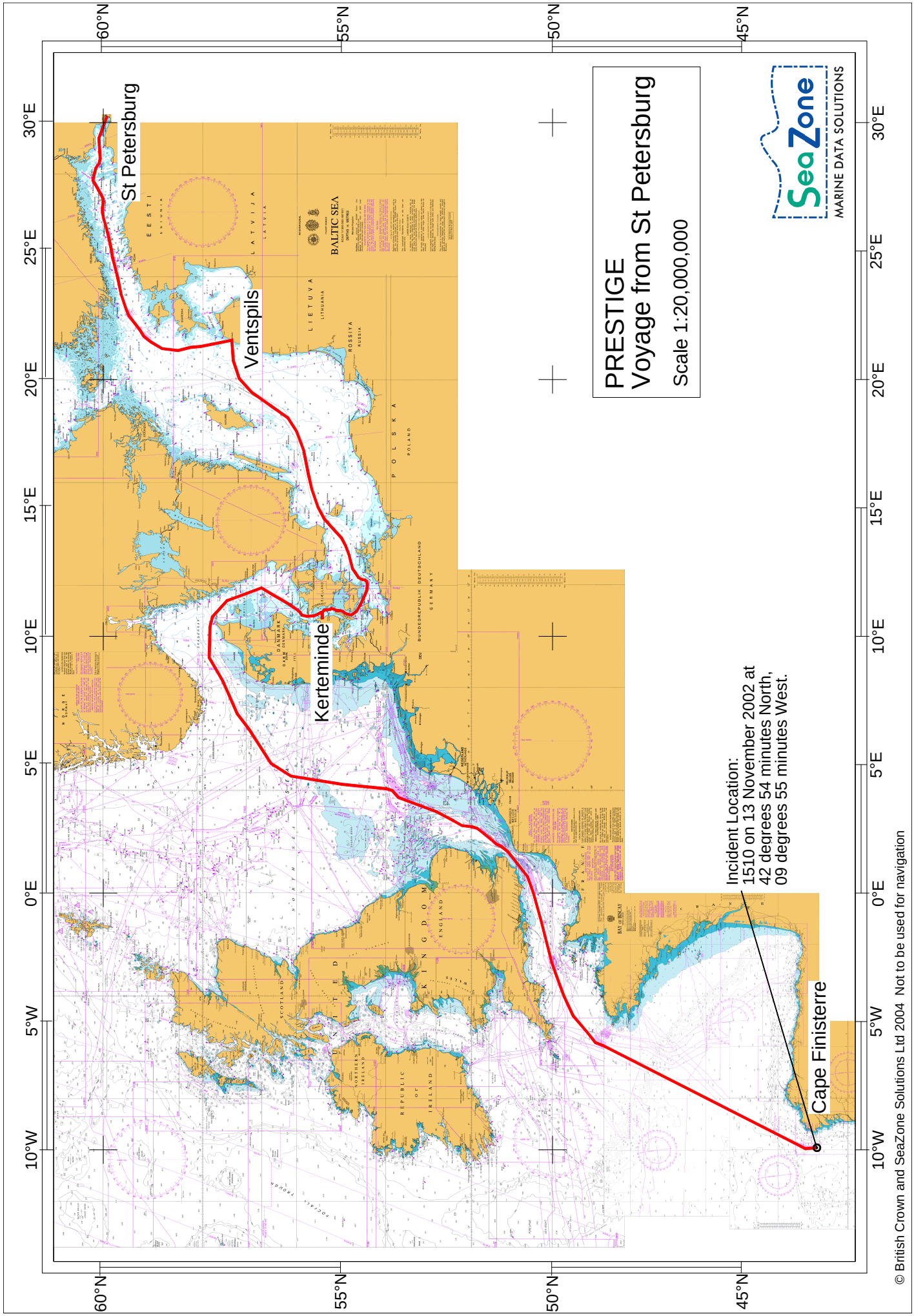
PRESTIGE
Voyage from St Petersburg
Scale 1:20,000,000
SeaZone
MARINE DATA SOLUTIONS
St Petersburg
Ventspils
Kerteminde
Cape Finisterre
Incident Location:
1510 on 13 November 2002 at
42 degrees 54 minutes North,
09 degrees 55 minutes West.
60°N
55°N
50°N
45°N
30°E
25°E
20°E
15°E
10°E
5°E
0°E
5°W
10°W
BALTIC SEA
LATVIJA
LIETUVA
POLSKA
DEUTSCHLAND
GERMANY
DANMARK
ROSSIYA
RUSSIA
EESTI
IRELAND
ENGLAND
SCOTLAND
FRANCE
BAY OF BISCAY
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Figure 1

EXECUTIVE SUMMARY

1.1 The 26 year old Bahamian registered tanker Prestige (Details of which are provided in Appendix A) broke in two and sank on Tuesday 19th November 2002 with a large amount of her original cargo of 76,972 tonnes of fuel oil still on board. The ship was some 130 miles off the North West coast of Spain at the time.

1.2 The ship had sailed from Ventspils in Latvia on 31 October 2002, bound to Gibraltar for orders, having loaded cargo at both St. Petersburg and Ventspils. Although the weather had deteriorated after entering the Bay of Biscay and the ship had slowed because of the rough seas and heavy swell, the voyage was uneventful until the afternoon of 13 November, when the ship was in the Traffic Separation Scheme off Cape Finisterre, Spain

1.3 At around 1500 on 13 November, the ship was struck by a large wave. A loud bang was heard and the ship rapidly developed a 20° list to starboard. A number of Butterworth covers became displaced from the starboard tanks as the ship heeled, spray was seen to be coming from the resulting openings in 3 Starboard wing tank, which had been empty, and cargo oil was seen to be coming from the Butterworth openings in other starboard wing tanks.

1.4 It is likely that the initial failure was in the side structure of 3 Starboard wing tank, followed by a failure in 2 Starboard after wing tank, probably in the bulkhead between the two tanks. There may possibly have been some damage to one of the cargo tanks adjoining 3 Starboard wing tank. The Master ordered 2 Port after wing tank and 3 Port wing tank to be flooded by gravity to correct the list which was slowly reduced to less than 5° by 2200.

1.5 All of the crew, apart from the Master, Chief Officer and Chief Engineer, were evacuated at about 1800 by two helicopters based in Spain. Despite the best efforts of the three remaining crew it was not possible to establish connection to a tug until about 0900 on 14th November after additional personnel had been placed on board.

1.6 The Master asked to be taken to a Place of Refuge but the Spanish authorities ordered the ship to be towed in a NW'ly direction away from the coast. On the morning of the 14 November a Spanish surveyor boarded together with some additional engine room crew to start the main engine. After some repairs this was done, although the Master explained that the vibration of the engine may cause further damage to the hull. The Master initially opposed the starting of the main engine but complied with the order of the surveyor.

1.7 A salvage team was engaged and requested permission from the Spanish authorities to take the ship to a Place of Refuge, but the request was denied. The salvage team boarded at about 0300 on 15th November and the Salvage Master made a further request to be allowed to take the ship to a Place of Refuge. This was refused and the team was told to take the ship 120 miles off the coast in accordance with an undertaking signed by the team before being allowed out to the ship. The ship was towed in a south westerly direction to try to find calmer waters but was not allowed to enter the Portuguese EEZ. The damage to the hull became progressively worse and eventually the ship broke in two. As the salvage team boarded the Master stopped the

main engine as further plating broke away from the starboard side.

1.8 A large amount of oil was released when the cargo tanks eventually breached on the morning of the 15th and subsequently until the ship sank. Further leakage from the wreck occurred after the sinking. Much of the oil polluted the Spanish coastline and, later, stretches of the French coast.

1.9 The probable cause of the initial breach in the hull was a large wave revealing a weakness in 3 Starboard wing tank. The weakness was probably one of, or more likely a combination of two or more of the following: ship-to-ship transfer damage sustained in St. Petersburg; fatigue; stresses due to large quantities of new metal being attached to old steelwork; and/or corrosion.

1.10 A number of conclusions are drawn concerning: the initial actions taken on board; the rescue of the crew; the salvage operation; the refusal of a place of refuge; and the treatment of the master. In addition there is comment on the quality of the surveys carried out and the management of the ship. The possible causes of the initial structural failure are explored in some detail.

1.11 Finally a number of recommendations are made, relating to: the detecting of defects and weaknesses during survey and after repairs; the reduction of any adverse effects of repairs; current strength requirements for deck opening securing arrangements; the need for clear lines of authority during an emergency; the authority of a master during an incident; and places of refuge.

2. NARRATIVE

Note: The times used in this report refer to ship's time unless otherwise indicated. Ship's time was 1 hour ahead of UTC.

2.1 Introduction

Prior to its final voyage, the Prestige was in St Petersburg from 22 June 2002 to 30 October 2002, acting as a storage and transfer facility, loading and discharging fuel oil (Details of the storage period and the trading history from 1996 to 2002 are provided in Appendix D).

2.2 The voyage from St Petersburg and Ventspils

2.2.1 On completion of the storage operations at St Petersburg, the Prestige was ordered to load a cargo for a destination to be disclosed on passing Gibraltar. It is common practice in the tanker trades to be ordered to proceed to an intermediate point in the voyage at which a final destination will be given; this is because cargoes are frequently traded during the voyage. Gibraltar is a point frequently used. A part cargo of FOM100 fuel oil was loaded in all cargo tanks, which were part filled. No cargo was loaded in 2 Port and Starboard after wing tanks or in 3 Port and Starboard wing tanks. When loading was completed, on the evening of 31 October 2002, the ship sailed for Ventspils in Latvia. (A chart showing the voyage from St Petersburg to the position of the initial incident is at figure 1)

2.2.2 At Ventspils further fuel oil cargo was loaded. Loading was completed on 5 November at 0320 (UTC +2) and the ship departed at 1430 (UTC+2) on the same day for Gibraltar for orders via Kerteminde.

2.2.3 Leaving Ventspils the ship had on board a cargo of 76,972 tonnes of fuel oil. The draft was 13.54m forward and 13.86m aft. The maximum shear force and longitudinal bending moment on the hull in the departure condition were 62% and 56% respectively of the maximum permissible values (Details of the loading conditions of the ship are provided in Appendix H).

2.2.4 A pilot boarded at 2154 on 6 November for the passage through the Great Belt. During the passage, the ship called at Kerteminde, taking 1,000 tonnes of bunkers. The drafts on departure were 13.52 m forward and 13.80 m aft. The apparent anomaly of the draft being less than sailing from Ventspils is due the variation in salinity between the two places. The maximum shear force and bending moment on the hull were 59% and 51% of the maximum permissible values for the ship.

2.2.5 The pilot disembarked at Grensa Pilot Station at 0115 on 8 November. Weather experienced during the passage to and through the Kattegat was moderate, the most extreme winds and sea experienced being on the evening of 6 November when winds were recorded as Force 6/7 for a brief period.

2.2.6 After disembarking the pilot, the bridge and engine room manning reverted to

normal seagoing watches. The three deck officers each performed 4 hour watches. The engine room watches were manned by an engineer officer and an oiler. The remaining engine room crew worked day work.

2.2.7 The voyage through the North Sea and the English Channel was without incident, passing through the Dover Strait on 10 November and reaching the Ushant Traffic Separation Scheme (TSS) on the afternoon of 11 November. Winds were from the West Force 6 to 7 throughout, but increased to Force 8 by 1600 on 11 November on entering the Bay of Biscay. Until this time, the main engine was run at 94 rpm, giving a speed of around 12 knots. The ship proceeded on a course of 209° with winds constantly recorded as Force 8. The ship was rolling, heavily at times, and shipping seas on deck. The ship was steered manually on entering the Bay of Biscay, and automatic steering was not used thereafter.

2.2.8 By 1200 on 12 November the ship was in the centre of the Bay of Biscay. The wind had reached West Force 9, and the ship was rolling heavily in the rough sea and heavy swell. The Master made frequent visits to the bridge and, as the weather deteriorated, he reduced the engine revolutions to 60 rpm.

2.2.9 At about 0800 on 13 November, approaching the Finisterre Traffic Separation Scheme (TSS), the Prestige called Finisterre Traffic and reported her position, course, speed and cargo and her destination as Gibraltar for orders. Finisterre Traffic accepted this report.

2.2.10 The course of 209° was maintained until just before 0900 on 13 November when it was altered to starboard to provide a lee for the Chief Officer, boatswain and sailors to go on to the main deck to tighten lashings on some items of deck equipment, thought to have moved in the severe weather. The work was completed within about 15 minutes and the course resumed.

2.2.11 The Prestige entered the Finisterre TSS at about 0900 on 13 November, still on a course of 209°. The course was altered to 180^{o} at 1100 at position latitude 43^{o} 16.5'N longitude 9^{o} 55.9'W. While on this course the ship was rolling heavily and shipping seas on deck. The speed made good fell to about 4 to 5 knots between 1100 and 1500. There was a confused wave pattern with heavy seas and swell from different directions (An analysis of the weather conditions is provided in Appendix K).

2.3 The initial incident

2.3.1 Around 1500 the Second Officer was on watch and a quartermaster was steering the ship, the Master and Chief Engineer were also on the bridge. At 1510 the ship was struck by a large wave and a loud bang was heard. The ship shuddered as she rolled to starboard and Butterworth covers were displaced from several tanks. Spray was sighted emerging from the Butterworth openings on 3 Starboard wing tank, which had been empty. The ship immediately began to list to starboard, reaching an angle of about 10^{o} within about two minutes and increasing to around 20^{o} by 1520 (A photograph taken on 13 November showing the initial list is at Figure 2). The main engine and boiler stopped and the ship continued to roll heavily.

November 13 2002 – Initial list

November 19 2002 – The final breaking up

Figure 2

2.3.2 The cargo hose rail and manifold drip tray on the starboard side of the ship were seen to be damaged; a little while later it was discovered that the starboard lifeboat had been destroyed and one inflatable liferaft had been lost overboard. The starboard side of the deck was awash, and some oil had escaped through the displaced Butterworth covers of some cargo tanks and was washing around the decks and over the superstructure. Some oil was washed into the sea causing some local pollution around the ship.

2.3.3 On the orders of the Master, the Second Officer immediately sounded the General Alarm and activated the EPIRB mounted on the starboard side of the bridge. He then transmitted a distress message by VHF radio and INMARSAT C.

2.3.4 The crew responded immediately to the General Alarm and mustered on the port side of the boat deck. The Third Engineer, who had been on watch in the engine room, left the engine control room and went to his muster station on hearing the General Alarm. He met the Chief Engineer on deck, and they, together with the Second Engineer, Electrician and four engine room ratings, returned to the engine room. The fuel supply was changed from heavy oil to diesel. The main engine was restarted at the third attempt and it continued to run at Dead Slow Ahead speed of about 50 rpm for a short time. The engine room crew then returned to their muster stations on deck. No attempt was made to restart the boiler as it was likely to cut out again due to the list. The boiler supplied steam for the windlass, mooring winches and cargo pumps.

2.3.5 At around 1545, the Master ordered 2 Port after wing tank and 3 Port wing tank to be filled to reduce the list. The Pumpman went to the pump room to open the sea valves, and the Chief Officer and a sailor opened the tank valves using the valve controls on the port side of the deck. These tanks were then filled by gravity, slowly reducing the list. By 2200 on the same day the list had reduced to about 5°, though the ship was still rolling. The starboard side of the deck was washed continuously by waves breaking over the deck. The escape of oil through the open Butterworth openings diminished as the list reduced.

2.4 Rescue of crew

2.4.1 The distress message transmitted from the Prestige was received both by Coruna Radio and Finisterre Traffic. Coruna Radio contacted the Prestige to confirm that the distress was genuine and obtain the ship's exact position, before broadcasting a Mayday relay message to all ships. Finisterre Traffic contacted the ship Walili, then about three miles astern of the Prestige. Walili confirmed that she would proceed towards the Prestige (A transcript of VHF calls to and from the Prestige is at Appendix I).

2.4.2 It is understood a request was made by the MRCC for the helicopter Helimer Galicia, owned and operated by SASEMAR (the Spanish maritime search and rescue service) and based at La Coruna, to be mobilised to assist with rescue operations. This request was timed at 1520 in the MRCC Log. After some difficulty in making telephone contact, a request was also made to the Xunta de Galicia Salvage Service for their helicopters Pesca I and II to be made available. The tug Ria de Vigo, which is understood to have been on charter to SASEMAR, was tasked to proceed to the

assistance of the Prestige. This entry was timed at 1534 in the MRCC record of events (Appendix I). The position of Ria de Vigo at that time was 23 miles SE of the Prestige.

2.4.3 Around 1552, the Prestige called Finisterre Traffic and asked for information on the rescue. The number of persons on board was confirmed to be 27 and the Prestige was advised that one ship and a helicopter were on the way to give assistance. The ship Walili arrived on scene at 1600. She then stood by the Prestige as requested by Finisterre Traffic. Walili confirmed to Finisterre Traffic that the pollution astern of the Prestige was slight.

2.4.4 The Master of the Prestige contacted Universe Maritime, managers of the ship, in Piraeus by INMARSAT telephone at 1650. He spoke to the Operations Manager to advise him of the situation. After discussing the situation with the Master, the Operations Manager immediately activated the Universe Maritime's Emergency Response Plan, and began to look for suitable salvage and towage assistance. He also appointed an agent at La Coruna to look after the ship's interests in Spain and to liaise with the Spanish authorities.

2.4.5 The helicopter Pesca 1 arrived at the Prestige at 1700, lifted off seven of the crew, then proceeded to Vigo Airport. The helicopter Helimer Galicia arrived at the Prestige around 1730 and began lifting off the remaining crew. Some difficulty was experienced by the crew in taking hold of the line from the helicopter due to the weather conditions (WNW Force 9) and the motion of the Prestige. By 1805 a further seventeen of the crew had been lifted off. The Master, Chief Engineer and Chief Officer remained on the Prestige. Helimer Galicia contacted the MRCC and advised that the three crew members were remaining on board. This was confirmed to Finisterre Traffic by the Master at 1815. Helimer Galicia took the seventeen crew members to La Coruna.

2.4.6 When the crew had been evacuated, the Chief Engineer went to the engine room and found the generator still running. He transferred fuel to the day tank and stopped non-essential pumps to reduce the load on the generator and conserve power.

2.4.7 During the call at 1815, the operator at Finisterre Traffic advised the Master that he was obliged to accept a towline from Ria de Vigo because the ship was drifting towards the coast. The Master advised Finisterre Traffic that his owners would arrange towage, and that he would have to contact them. Finisterre Traffic agreed he should do so. In the same call, the Master advised that some crew from the tug would be required on board the Prestige because there were insufficient crew aboard to secure a towline. At the time of this call Ria de Vigo was about 2.5 miles south-east of the Prestige.

2.5 Towage

2.5.1 On the afternoon of 13 November 2002 the tug Ria de Vigo was cruising about 10 miles southwest of Cape Finisterre. Some time after 1600 she began to move in a westerly direction and approached the Prestige from an ESE'ly direction. Ria de

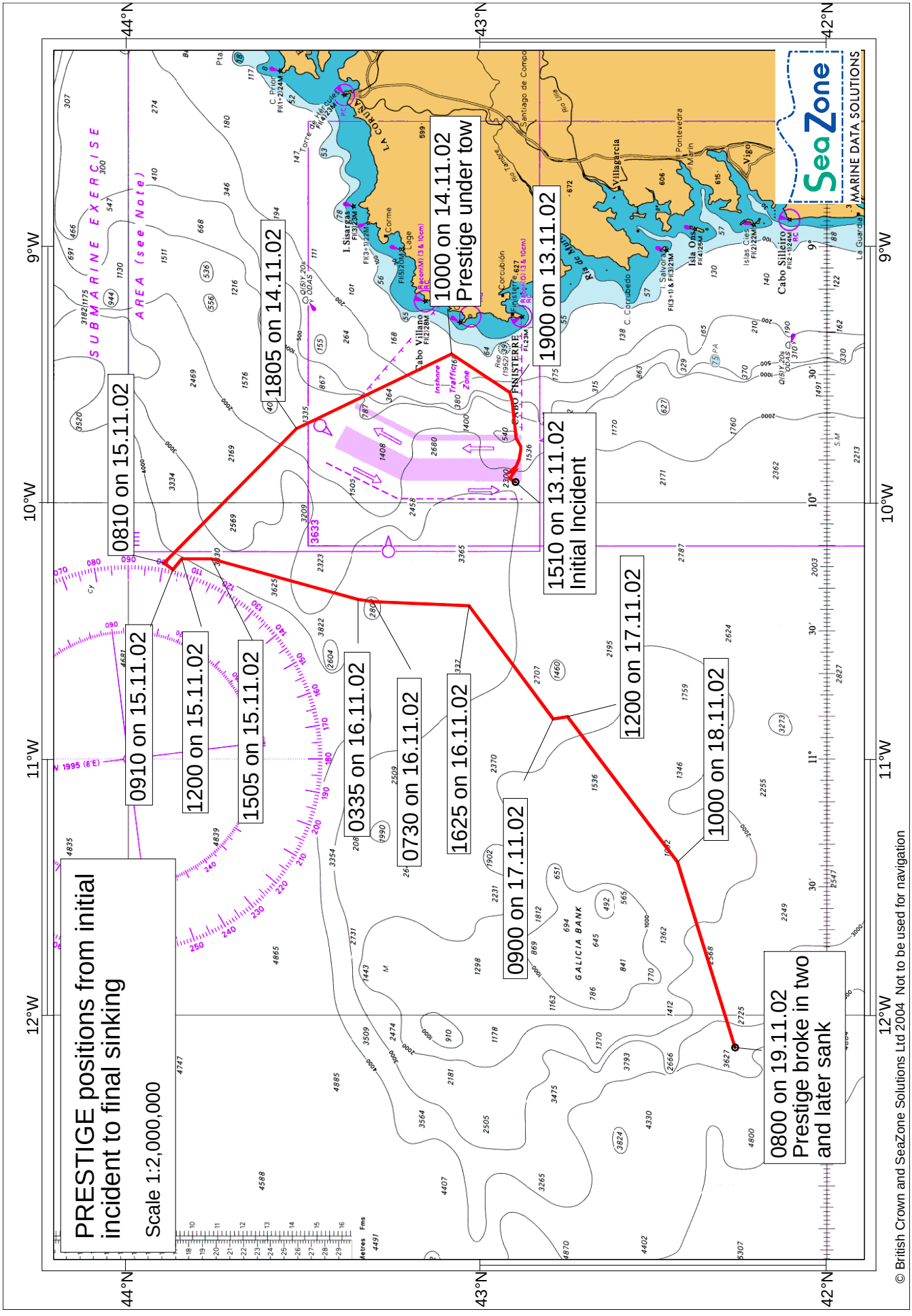
PRESTIGE positions from initial incident to final sinking
Scale 1:2,000,000
0810 on 15.11.02
0910 on 15.11.02
1200 on 15.11.02
1505 on 15.11.02
1805 on 14.11.02
0335 on 16.11.02
0730 on 16.11.02
1625 on 16.11.02
0900 on 17.11.02
1000 on 14.11.02
Prestige under tow
1900 on 13.11.02
1510 on 13.11.02
Initial Incident
1200 on 17.11.02
1000 on 18.11.02
0800 on 19.11.02
Prestige broke in two and later sank
SUBMARINE EXERCISE AREA (see Note)
GALICIA BANK
CORUÑA
FINISTERRE
Cabo Villano
Cabo Silleiro
Vigo
Villagarcía
Pontevedra
Marín
Santiago de Compostela
SeaZone
MARINE DATA SOLUTIONS
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Figure 3

Vigo arrived in the vicinity of the Prestige around 1830 on 13 November, but did not remain in close proximity. The Masters of the Prestige and Ria de Vigo were in VHF radio contact. Radar plots from the Finisterre Traffic System indicated that Ria de Vigo was 4.4 miles south-east of the Prestige at 1800 and 3.3miles WNW of the Prestige at 1900. No offer to provide towage of the Prestige was made at this time. (A plot of the Prestige's movements after the initial incident is provided at figure 3)

2.5.2 The Operations Manager of Universe Maritime telephoned the Master of the Prestige at about 1920 and advised him that a salvage agreement was about to be completed. The offer of salvage services was made by facsimile at 1941, and immediately accepted by telephone, with facsimile confirmation to the Salvors following within minutes. The offer stated that Tecnosub would act as co-Salvors with Smit Salvage and that Remolcanosa would provide tugs under an existing agreement. The offer also stated that the Master of the Remolcanosa tug Ria de Vigo had been instructed by his owners to make fast to the Prestige. The Operations Manager of Universe Maritime then tried to telephone the Master of the Prestige through INMARSAT, but could not make contact at that time. He then sent a message by e-mail instructing the Master to take a tow from Ria de Vigo. He also asked him to make telephone contact with the ship's managers in the same message.

2.5.3 Smit Salvage sent a facsimile to Universe Maritime at 1949 requesting that they instruct the Master of the Prestige to accept a tow from Ria de Vigo. The Operations Manager sent a further e-mail to the Master of the Prestige at 2032 and shortly after that he was able to speak to him by telephone. The Master explained that he had been engaged on deck earlier and confirmed that he would make fast to Ria de Vigo.

2.5.4 The Master of the Prestige called Finisterre Traffic at 2101 and confirmed that a salvage agreement had been concluded and that he was ready to accept a towline. He again advised that some assistance would be required on board the Prestige to make the towline fast as there were only three crew members on board. The operator acknowledged this request and suggested the Master should contact the tug Ria de Vigo. After making this call, the Master, Chief Engineer and Chief Officer made their way forward along the access structure to the forecastle. The ship, listed slightly to starboard, was rolling heavily with seas breaking over the deck. The plating of the access structure, which was on the starboard side of the deck, was covered in a film of oil in places, and some plates were missing, having been washed away by the waves breaking on deck. As a result of these conditions, it took 20 minutes for the Master, Chief Engineer and Chief Officer to reach the forecastle. The deck lights were switched on, but no steam was available to operate the mooring winches.

2.5.5 The tug Ria de Vigo approached and an attempt to connect a towline began at about 2130 on 13 November. A heaving line was sent over from Ria de Vigo by rocket and secured on board the Prestige. A messenger line was then attached to the heaving line on the tug, and hauled on board the Prestige by hand. It was passed through a fairlead, round a set of bitts, and back out through another fairlead, so that it could be heaved back on board the tug by means of the heaving line. Once secured on the tug, the messenger was to be used to heave a towline to the Prestige.

2.5.6 Seven attempts were made to connect a towline between around 2130 on 13 November and 0600 on the 14 November. At each attempt either the messenger or heaving line parted. Helicopters remained on standby throughout this operation and would have been available had it been necessary to evacuate the remaining personnel from the Prestige.

2.5.7 Finisterre Traffic contacted the Prestige on VHF at about 0041 and asked why the emergency towing gear could not be used. The Master explained that it was situated on the poop, and that it would be too dangerous for men to work in this area in the prevailing conditions, with the ship listed and rolling heavily, decks covered in a film of oil, and seas breaking over the deck. Video footage taken by one of the rescue helicopters when taking off crew members from port side of the poop some six hours earlier shows less severe conditions than were originally indicated. At that time deployment of the aft towing gear looks as if it may have been possible. Such deployment at an early stage in the incident would undoubtedly have made the operation to connect the tow easier and connection may have been achievable earlier. However, the situation would have been more difficult when the tug was available as it was then dark and there were only three crew members on board. Given the long experience of the Master his decision not to attempt to deploy the after towing gear has to be respected. The forward emergency towing gear consisted of single point mooring stoppers for securing towing pennants. These required the use of steam powered winches that were not available thus making any operation to connect a tow using this equipment very difficult.

2.5.8 The tug Ibaizabal Uno was ordered by Finisterre MRCC (CZCS Finisterre) to proceed from La Coruna to the casualty scene at 1600 on 13 November, and arrived in the vicinity of the Prestige around 0130 on 14 November. Sometime later, two crew members from the tug Ibaizabal Uno were transferred to the Prestige by helicopter to assist in securing the towline. The time of their arrival on board the Prestige is uncertain.

2.5.9 Four further personnel were landed on the Prestige at about 0800 on 14 November, but Ria de Vigo still could not be successfully connected. The tugs Charuca Silviera, Sertosa 32 and Ibaizabal Uno had arrived on scene earlier, and a 650 metre towline was successfully connected to Charuca Silviera at 0850 on 14 November. At around 0920, Charuca Silviera started towing the Prestige in a NNW'ly direction at a speed of around 2 knots; the towline parted about 0945. The tug Sertosa 32 made fast at about 1000; towing then continued in a NW'ly direction. The wind gradually decreased during the morning of 14 November, falling to about 10 knots by midday. The sea fell to around 1 m or less. There was a persistent swell, with a significant wave height over 4 m high and a period of 11 to 12 seconds, from the WNW. The total significant wave height was between 4 and 5 m throughout 14 November in the vicinity of the Prestige (See weather analysis report at Appendix K)

2.5.10 At about 1050 on 14 November, the Second Engineer, Third Engineer, Electrician, an Oiler and the Pumpman returned to the ship by helicopter. They were accompanied by a surveyor from the La Coruna Harbour Master's Office. The surveyor instructed the Master to start the main engine immediately. No authorization to take control of the ship was given to the Master by the surveyor. The Master was

reluctant to start the main engine as he considered further damage to the hull might result. However, he complied with the instruction and ordered the Chief Engineer to start the main engine. The Chief Engineer, assisted by the crew who had returned to the ship, then began the necessary preparations to make the engine ready for starting.

2.5.11 The surveyor accompanied the crew to the engine room. One generator was running, and a second was required to provide sufficient power to start the main engine. After changing a lubricating oil filter and bleeding the fuel line of air, a second generator was started and run up to speed. After a few minutes, when the running speed had been attained, the generators were synchronised and power fed to the main switchboard. Sufficient power was then available to start the main engine.

2.5.12 There is conflicting evidence surrounding the actions of the surveyor during the operation to start the main engine. When giving evidence to The Bahamas' investigators, some months after the event, the surveyor stated that the ship's crew, especially the Chief Engineer, were unhelpful and, furthermore, the surveyor's efforts to get the main engine started were sabotaged on two occasions. However, the ship's engineering staff, maintain that the surveyor left the engine room shortly after the second generator was put into service and before the main engine was restarted.

2.5.13 The ship's staff maintain that a spare main engine cylinder cover had moved from its stowage position as a result of the severe weather and heavy list. It was found to be lying in contact with the main engine and to have damaged some fuel lines and actuators for No 5 cylinder. The cover weighed around 400 kg and had to be moved before work on the main engine could begin. The surveyor stated however that the fuel lines were deliberately damaged by persons unknown to prevent the main engine from being restarted. Given the prevailing situation, it is difficult to think of any reason why someone should wish to sabotage attempts to restart the main engine. However, the fuel pipes and fuel actuators were repaired, and the main engine fuel and lubricating pumps started. Difficulties were experienced in attaining the necessary lubricating oil pressure; these were resolved and the main engine made ready to start.

2.5.14 The main engine was started at about 1530. The Master requested that the engine speed should not exceed its critical speed, as he feared the resultant vibration might cause further damage to the hull. This was agreed by the Spanish surveyor, and the engine run at around 55 rpm. The Third Engineer remained in the engine room continuously while the main engine was running.

2.5.15 During the attempts to repair the main engine, technical advice was sought from the Manager's Emergency Response Team in Greece. This was of assistance in completing the repairs speedily.

2.5.16 At around 1200 on 14 November the Prestige stopped drifting towards the coast and Ria de Vigo made a 645 metre line fast. Ria de Vigo started towing the Prestige on a heading of 330° at a speed of 2.5 knots. The second tug Sertosa 32 was also connected forward and assisted with the towage, while the tugs Charuca Silviera and Ibaizabal Uno remained in attendance.

2.5.17 During the investigation into the incident, the Spanish authorities were adamant that at no time was the Master relieved of his command although they accepted that their priority during the emergency was to move the Prestige away from the coast as quickly as possible. However, the Master had no influence on the direction of towage, this was decided by the MRCC. When giving evidence to Bahamas' investigators, the Spanish surveyor stated that his role was only to start the main engine as quickly as possible and he was not involved in the decision to take the ship away from the coast.

2.5.18 The position of the Prestige at 1419 on 14 November is recorded in the MRCC log as latitude 43^{o} 11.4'N longitude 9^{o} 24.2'W, some 8.6 miles from Cabo Villano.

2.5.19 The Master of the Prestige was not in control of the tugs; they were being directed from ashore. Realising the ship was being towed in a NW'ly direction, away from the coast, and towards more severe weather in the Bay of Biscay, he asked the Spanish surveyor for the Prestige to be taken to a place of refuge. This was refused. The Master then suggested a course of 270°, but this was also refused. The Spanish surveyor was lifted off the Prestige by the helicopter Helimer Galicia around 1800 on 14 November.

2.5.20 At 1803 on 14 November, the Master called Finisterre Traffic by VHF and requested a change of course to 270°. The position of the Prestige was given as latitude 43° 26.2'N longitude 9° 38.1'W. Finisterre Traffic insisted that the present course and speed be maintained. The Master acknowledged this order, but reminded Finisterre Traffic that this course would take the ship back into the Bay of Biscay.

2.5.21 Towage continued throughout the evening of 14 November, with the speed increasing to about 6 knots after the main engine was started. An entry in the MRCC log states that Ria de Vigo reported the position to be latitude 43° 45.6'N longitude 9° 56.5'W at 2256, with winds from the NW at 20 to 25 knots, and a swell of 2.5 m, also from the NW. The Spanish frigate Cataluna was also in the vicinity (Figure 4 shows the Cataluna and the Prestige under tow being guarded). The speed of the Prestige was reported to be 2.5 knots and 4.5 knots at 0206 and 0300 respectively on 15 November. The reasons for these variations in speed are not clear.

2.6 The Salvage Team

2.6.1 The Smit Salvage Master and his team arrived by air at La Coruna Airport at 1415 on 14 November, less than 24 hours after the initial incident, and were met by their locally appointed agent. The Salvage Master immediately requested helicopter transport to the casualty and this request was relayed by the agent to the MRCC. The agent was advised that helicopter requests should be made in writing and arrangements were made to submit the request by facsimile. At 1720 on 14 November the Salvage Master was informed that helicopter transport was available. On arrival at the airport at 1800 the Salvage Master received a telephone call from a government official, who asked about the Salvor's intentions. The Salvage Master replied that, as the full extent of the damage to the Prestige was not known, his priority was to board the ship to check her condition with a view to proceeding to a sheltered anchorage or

perhaps Gibraltar for a ship to ship transfer of cargo. The government official acknowledged the Salvage Master's explanation and asked to be kept informed.

2.6.2 At 1810 the Salvage Master was informed by an official of La Coruna Harbour Master's office that that the Salvors were required to sign a written undertaking to move the Prestige 120 miles from the Spanish coast, and that this must be done before permission would be given for the helicopter flight to the ship. The Salvage Master waited at the airport and met the Harbour Master of La Coruna at 1900. He was presented with a letter of undertaking, which he signed as requested (Copies of the undertaking and a translation are provided in Appendix J).

2.6.3 The salvage team waited at the airport and were advised at 1930 that efforts were being made to find a more suitable helicopter. At 2115 the Salvage Master was advised that the helicopter pilot had received instructions to take the salvage team to the casualty and evacuate the remaining crew members. The Salvage Master requested through the helicopter pilot that his instructions be amended to permit the crew to remain on board the Prestige with the salvage team; this was agreed at 2130. Within minutes of this authorisation being received the helicopter pilot received a telephone call ordering him not to take the salvage crew to the Prestige. The salvage team then left the airport. While waiting at the airport the Salvage Master had made several requests to the Helicopter Control Tower for weather forecasts to be made available to assess the risk of boarding the Prestige. None were provided.

2.6.4 At 0030 on 15 November, the Salvage Master was informed that authorisation for the flight to the Prestige had been granted and at 0150 the salvage team left La Coruna airport by helicopter. The helicopter arrived in the vicinity of the Prestige at 0250. After circling the ship the nine man salvage team were lowered onto the after deck with their equipment. This operation was completed about 0340. The damage to the Prestige could not be assessed from the helicopter due to the darkness.

2.6.5 The Chief Officer was on the bridge at the time the helicopter carrying the salvage team approached the Prestige. At about 0330, he heard a loud bang from the direction of the starboard side of the ship. The deck lights were switched on and a section of side shell plating was seen to be breaking off from the vicinity of 3 Starboard wing tank. He advised the Master immediately. The Salvage Master and eight salvage personnel were landed on board the ship at about the same time and proceeded to the bridge where they met with the Master, Chief Engineer and Chief Officer. The main engine of the Prestige had been stopped by the Master at around 0330. The ship was at that time being towed by Ria de Vigo and Sertosa 32.

2.6.6 The Salvage Master made an inspection of the deck from the access structure at 0400 and was able to see with the decklights on that there was damage in the vicinity of the starboard ballast tanks which he estimated to extend over a length of about 30 metres. Water, but no oil, was seen to be coming out of the open Butterworth opening in 3 Starboard wing tank. Following this initial assessment, the Salvage Master considered that the ship should be turned to a SW'ly heading to reduce the strain on the hull by allowing the ship to roll rather than pitch.

2.6.7 The Salvage Master called Ria de Vigo, who advised that she had earlier sustained damage on her starboard quarter. The starboard bulwark of Ria de Vigo had been damaged by contact with an anchor on the Prestige. The bulwark plating was damaged and it was feared that the towline might foul the jagged steel if a turn to starboard was attempted. Consequently, she could continue straight ahead or turn to port, but not turn to starboard. Ria de Vigo then started a slow turn to port. The position at 0505 on 15 November while turning is recorded in the MRCC log as latitude 43^{o} 53.7'N longitude 10^{o} 08.9'W. The tug Sertosa 32 continued to assist in the towage and in bringing the ship to a heading of 230^{o}.

2.6.8 A more detailed assessment of the damage to the ship was made by the Salvors at daylight. This confirmed that the deck plating over 3 Starboard wing tank was buckled, and the most of the shell plating above the water level in way of 3 Starboard wing tank was missing. 2 Starboard after wing tank and 3 Starboard wing tank were open to the sea. The Salvors was also suspected that 3 Centre tank was leaking oil through 3 Starboard wing tank and that 4 Starboard wing tank may have sustained damage. The oil leaking from the ship was caused by the ship rolling. Based on this assessment the Salvage Master considered the only way to save the ship and her cargo was to move her to shelter on the Spanish coast to undertake a ship to ship transfer of cargo. All of this information was passed to the Salvor's representative in La Coruna.

2.6.9 The Salvor's representative in La Coruna started looking for a suitable tug to replace the damaged Ria de Vigo and made a request to the Spanish authorities for permission to bring the Prestige into sheltered waters on the coast of Spain. The Salvors were called to a meeting with the Spanish authorities at around 1100 on 15 November. The meeting was attended by the Harbour Master of La Coruna, The Director General of SASEMAR, the Director General Marine Mercante, a representative of the Galician Government, and representatives of Remolcanosa. The situation was explained to the meeting by the Smit representative and the request to bring the Prestige to shelter on the Spanish coast repeated. This was refused by the Spanish authorities, who again instructed the Salvors to take the ship 120 miles off the Spanish coast in a W'ly direction and suggested considering the possibility of a ship to ship transfer south of the Canary islands. The Spanish authorities are understood to have confirmed that their naval vessels would be used to ensure the Prestige convoy complied with this instruction. Following this decision the Salvors submitted a formal written request to bring the Prestige inshore (see copy of request at Appendix J).

2.6.10 During the morning of 15 November, the tow headed in a SW'ly direction at about 3 knots. On board the Prestige, the Salvors were successful in blanking off some of the Butterworth openings, but no attempt was made to blank those openings which were venting, as this was considered too dangerous. Water which had accumulated in the accommodation was found to be leaking into the engine room and falling close to the generators. The salvage team were able to drain the water into the engine room clear of the generators.The Salvors also began deploying the emergency towing gear at the stern of the Prestige for connecting up the tug Alonso de Chaves that was en route to the scene. At around 1410 the tug Charuca Silviera connected up with Ria de Vigo to assist in maintaining heading, and the tow continued in a SW'ly direction at a speed of 1.7 knots. The Salvage Master consulted his Naval Architect

Under tow and under guard

Figure 4

Under tow

Helicopter in attendance

Figure 5

about pumping out the ballast in the port wing tanks but decided not to do so as this would render the deck more vulnerable to breaking seas.

2.6.11 The weather deteriorated suddenly around 1600. Wind increased to force 8 to 9 in squalls and large waves were breaking over the forecastle and main deck of the Prestige.The Salvage Master decided that all personnel should be evacuated from the ship for the night. The officer in charge of the MRCC instructed the Master of the Prestige to bring the ships documents and log book on boarding the helicopter. The Master gathered the documents together and wrapped them in protective plastic sheeting. He took the ship's documents with him to the helicopter lifting area, but was ordered by the helicopter crew not to bring any packages on board the helicopter.

2.6.12 At around 1800 on 15 November, the eight crew of the Prestige and nine salvage personnel were evacuated from the ship by helicopter and landed at La Coruna around 1840. The Master was immediately arrested by the police and interviewed between 2200 on 15 November and 0200 on 16 November. He repeatedly asked to be allowed to rest, but his requests were denied. The Master was allowed to sleep after his interview finished at 0200. The Chief Engineer and Chief Officer were then questioned until 0445. On completion of the interviews, the Master was kept in custody, and the Chief Engineer and Chief Officer allowed to go to a hotel. The Chief Engineer and Chief Officer were not charged with any criminal offences at that time. The Master had allegations made against him by the Harbour Master of La Coruna (See Appendix L). By the time he was allowed to rest, the Master had been continuously occupied by duty and interview for 59 hours, he had also been on the bridge before the initial incident. The Chief Engineer and Chief Mate had been similarly occupied for over 60 hours.

2.6.13 During the evening of 15 November, the tug Alonso de Chaves arrived on scene and attempted to connect to the emergency towline at the stern of the Prestige. There were no personnel on board the Prestige at this time. The emergency towing pennant had earlier been prepared by the salvage team so that it could be picked up by a tug without assistance from anyone on board the Prestige. The messenger was secured, but parted and no connection was made. The towline of Sertosa 32 also parted, but Ria de Vigo continued to tow throughout the night making slow progress.

2.6.14 The salvage team returned to the Prestige by helicopter on the morning of 16 November and boarded around 0900. They reported the wind to be force 8 to 9, with a swell of 6 to 8 metres. The deck plating over 3 Starboard wing tank was now missing. Seas were breaking over the forecastle, and it was not possible to proceed forward to reconnect the towline to Sertosa 32. The towing pennant connected to Ria de Vigo was known to have been damaged, but could not be replaced with a new one in the prevailing weather conditions. The emergency towing pennant at the stern of the Prestige was picked up by Alonso de Chaves at around 1400 at the second attempt. The tow proceeded in a SW'ly direction at a speed of around 2 knots for the remainder of the day and throughout the night, with Ria de Vigo connected forward and Alonso de Chaves aft.

2.6.15 The towing pennant forward by which Ria de Vigo was towing had sustained some damage and needed to be replaced. Around 0800 on 17 November, Alonso de Chaves began towing the Prestige stern first, with Ria de Vigo remaining connected at

the bows. Towing stopped at 1000 on instructions from the Spanish authorities. The reason for this is not known. These instructions were passed directly to the tugs without consultation with or the knowledge of the Salvors. The Salvage Master with three others boarded Ria de Vigo around 1330. They observed that the starboard derrick post on the Prestige was leaning at an angle of about 20^{o} and that the longitudinal bulkhead between 3 Starboard wing tank and 3 Centre tank was damaged. A large amount of oil was seen to have escaped into the sea.

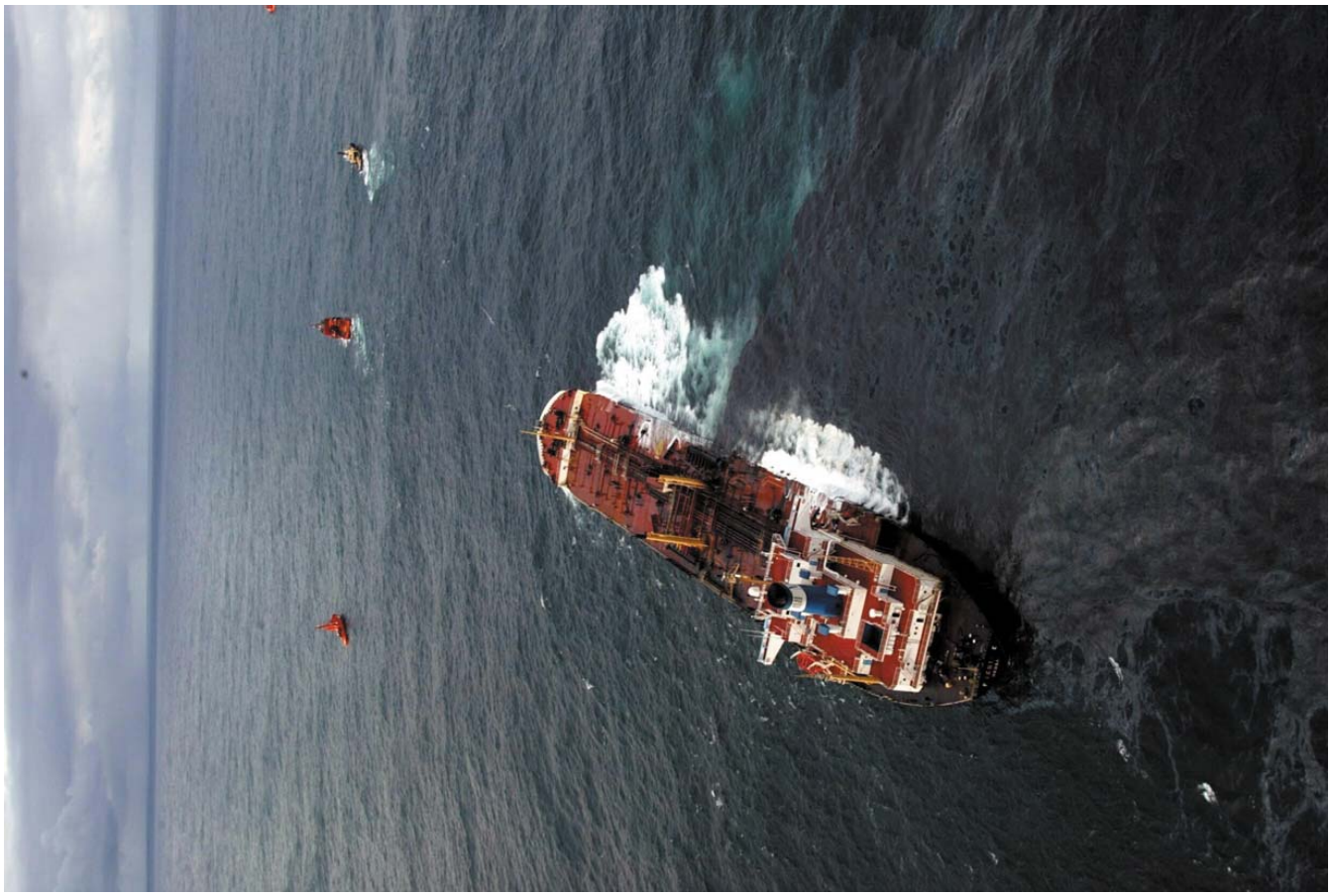
2.6.16 The tug Deda arrived in the vicinity of the Prestige around 0800 on 18 November. The transfer of the towline from Alonso de Chaves to Deda was successfully completed by 1035 and Deda then began towing the Prestige by the stern. Three salvage personnel on board Deda were transferred to the Prestige, where they were joined by five others from Ria de Vigo around 1240. They pumped the engine room bilges dry, shut down the generator, closed all seawater inlet valves in the engine room and rigged an emergency towing line on the bow of the Prestige. This was completed by around 1500. Three Spanish officials boarded the Prestige during the afternoon to collect documents and cargo samples.

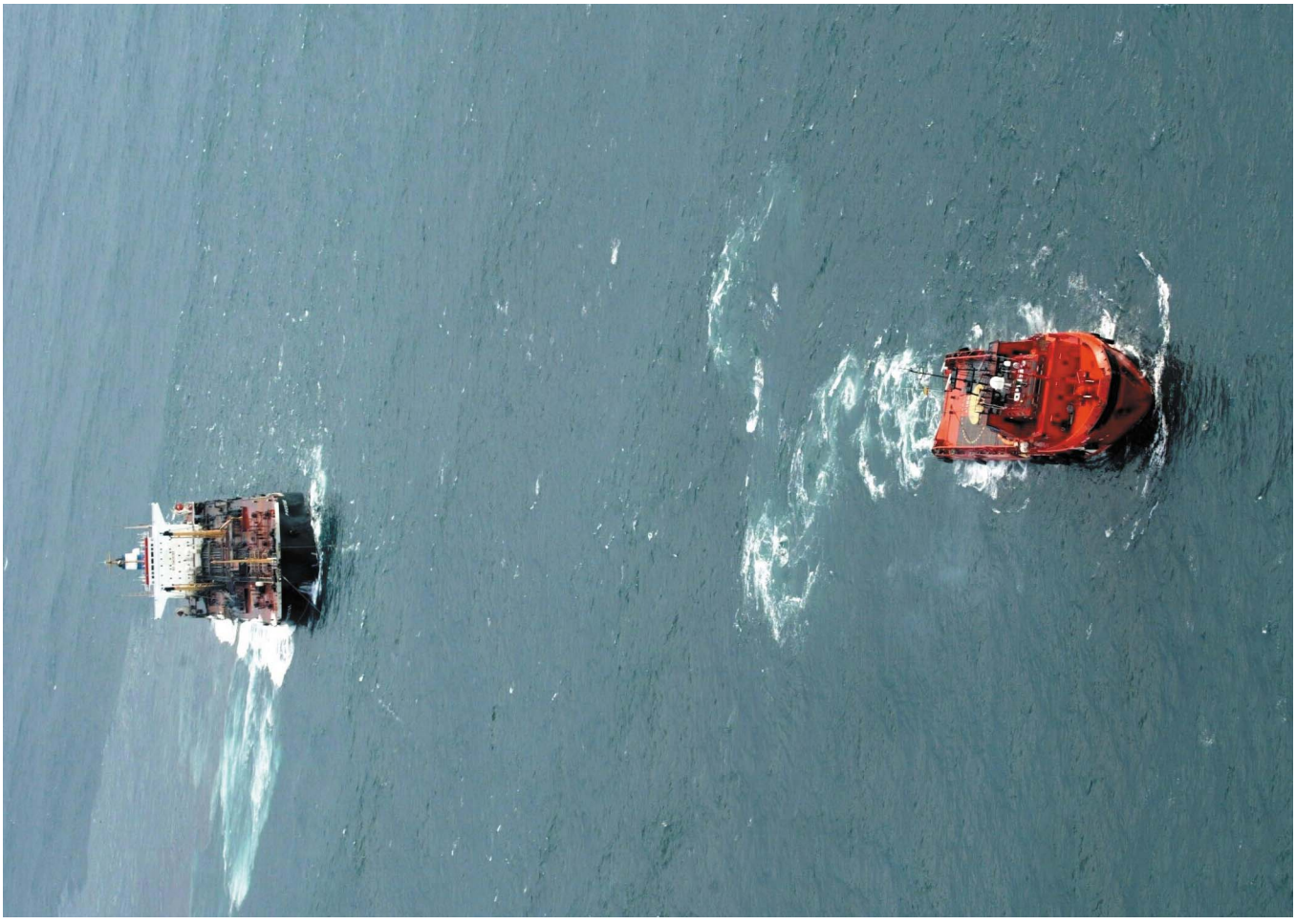
2.6.17 Ria de Vigo began shortening her towline at 1035 on 18 November and remained in attendance after disconnecting. At about the same time, the Spanish authorities advised the owners of the Ria de Vigo that Ria de Vigo should be released immediately. The Salvage Master advised that Ria de Vigo was required on site and could not be released. It was agreed by SASEMAR at 1120 that Ria de Vigo could remain in attendance. Sertosa 32 and Alonso de Chaves were released and returned to port. Deda resumed towing the Prestige stern first at around 1800 in a SW'ly direction at a speed of about 3 knots. The position of the Prestige at 1904 on 18 November was reported by Ria de Vigo to be latitude 42^{o} 26'N longitude 11^{o} 28.7'W.(Figure 6 shows tht Prestige under tow)

2.6.18 Towage continued in a SW'ly direction for the remainder of the evening. At 2340 on 18 November the position of the Prestige was reported by Ria de Vigo to be latitude 42^{o} 19.6'N longitude 11^{o} 42.9'W. At that time the Portuguese warship Jaoa Patino called Ria de Vigo and inquired if they were aware that the tow could not pass into the Portuguese Exclusive Economic Zone and suggested they contact the Spanish authorities.

2.6.19 At 0000 on 19 November, following some communciations between Ria de Vigo and the Spanish authorities, Ria de Vigo instructed Deda to set a course of 270^{o}. The position of the Prestige was reported to be latitude 42^{o} 18.2'N longitude 11° 46'W at this time. Towage continued with Deda towing the Prestige stern first at a speed of 2 to 3 knots on a course of 270^{o} and with Ria de Vigo connected forward.

2.6.20 At 0800 on 19 November, the Prestige was seen to be buckling and breaking up. Deda was ordered to stop towing by the Salvors, and to cut its towline. By 1125 both sections of the Prestige were vertical at the position latitude 42^{o} 12.6'N longitude 12^{o} 03.9'W. The aft section sank at 1145 in position latitude 42^{o} 12.6'N longitude 12^{o} 03.9'W. The forward section sank at 1615 in position latitude 42^{o} 10.8'N longitude 12^{o} 03.8'W. The charted depth of water at the two locations is 3600 m. All the towing vessels were released at 1710 and returned to port.





Under tow

Figure 6

2.7 Oil pollution

2.7.1 Oil pollution from the Prestige began initially when the Butterworth plates were dislodged at 1510 on 13 November. Fuel oil spilled out of the cargo tanks as the ship rolled heavily. The oil was washed around the main deck, poop, forecastle, and the lower parts of the accommodation block. This pollution was relatively light, as reported by Walili, which was first on scene at 1600 on 13 November.

2.7.2 When giving evidence to Bahamas' investigators, the pilots of the two rescue helicopters Pesca 1 and Helimar Galicia stated that there was a heavy concentration of oil in way of a hole that was visible in the the ship's starboard side near the manifold. The helicopter Pesca II, at 1941 on 13 November, also reported a slick about 5.7 miles long and 300 m wide, south of the track followed by the Prestige from the time of disablement, although it was dark at this time and this could have been the result of oil escaping through the Butterworth openings.

2.7.3 A second oil slick was reported by the helicopter Pesca I at 0933 on 14 November. This slick extended from latitude 42° 54.97'N longitude 9° 45.9'W to latitude 43° 04.9'N longitude 9° 24.5'W. The slick was reported as about 20 miles long and 200 metres wide, but the distance between the reported positions is 11.5 nautical miles.

2.7.4 A further oil slick was reported from the helicopter Helimer Galicia at 1536 on 14 November. This slick extended from latitude 43° 17'N longitude 9° 27'W SE to latitude 43° 09.2'N longitude 9° 18'W, and then SW to latitude 42° 49.3'N longitude 9° 54.8'W. The slick was reported to be most concentrated at the south-western end. This slick followed closely the track of the Prestige as she drifted towards the coast and was then towed in a NW'ly direction between1900 on 13 November and 1500 on 14 November.

2.7.5 Photographs of the vessel taken on the 14th of November, after the ship had been taken in tow, clearly show oil escaping from the hull in the region of the starboard manifold. This may indicate that one or more cargo tanks adjacent to 3 Starboard wing tank had been breached.

2.7.6 A number of small oil slicks were also reported by a ship in the vicinity of latitude 43° 36'N longitude 9° 42'W at 1048 on 15 November. Another ship reported a slick several miles long and about 200 metres wide in latitude 43° 36'N longitude 9° 42'W at 1150 on the same day.

2.7.7 It is outside the scope of this investigation to examine the subsequent pollution or the examination of the wreck by the Spanish authorities.

3. ANALYSIS OF EVIDENCE

3.1 Introduction

3.1.1 The Prestige was a 26 year old, single hull tanker, subject to the Enhanced Survey Programme adopted by the International Maritime Organization (IMO) for such ships, in addition to the standard survey requirements of the American Bureau of Shipping (ABS). The ship had also been subject to various inspections, such as a SIRE inspection some six months before the incident. Yet, despite the inspections and surveys, the ship suffered structural failure and eventually sank.

3.1.2 During our investigation into the loss of the Prestige, specialists in ship structures, meteorology and consultants of international repute and wide experience of ship casualties were engaged to assist in those parts of the investigation in which their specific expertise would assist in analysing the evidence and identifying possible causes of the casualty. Careful consideration has also been given to other investigations, including those by the ABS, BEAmer, and the European Parliamentary Committee. A further document has also been sent to the investigation team purporting to be a report on trials carried out by Canal de Experiencias Hidrodinamicas for the Directorate General of the Merchant Marine in Spain.

3.2 Initial Sequence of Events

3.2.1 Weather

3.2.1.1 The weather experienced in the Bay of Biscay was recorded in the ship's log as severe, with the ship rolling heavily and shipping seas on deck. The crew further described the conditions at the time of the casualty and in the hours immediately following as 'atrocious'. The casualty occurred when the ship was struck by a particularly large wave. Expert meteorological advice was commissioned by the Bahamas' investigation team to provide a detailed analysis of the weather encountered by the Prestige (Appendix K). The report by Canal de Experiencias Hidrodinamicas also contains wave information.

3.2.1.2 The weather analysis confirms that weather encountered on Tuesday 12 November was rough, but not extreme, with winds of up to 29 knots and a significant wave height of from 4.8 to 5.2 m. The swell was on the starboard beam, from a WNW direction. The further deterioration in the weather that occurred on Wednesday 13 November was caused by the development of a complex low, which deepened very close to the Prestige as she progressed southwards off Cape Finisterre. The onset of the most severe weather occurred on the afternoon of 13 November, with a sudden increase in wind to force 9 from the WNW, but the sea state at the time is of more direct significance when considering the cause of the casualty. A long period NW'ly swell was accompanied by a short period sea from WNW and short period waves from SW. The sea state was therefore very confused. It is estimated that the Prestige encountered a significant wave height of 6 metres, implying that individual waves of 10 to 11 metres would have been occasionally been encountered. The expert analysis further concludes that 'although the overall conditions at the time of the initial incident were not exceptional the situation was such that isolated steep, high toppling

wave crests may have occurred, associated with individual waves exceeding 10 metres from trough to crest'. Such a large wave is consistent with the description of the Master and Second Mate who were on the bridge at the time of the initial incident. The report by Canal de Experiencias Hidrodinamicas indicates that the significant wave height could have been as high as 8.4 metres, which, if correct, would give a higher individual wave height.

3.2.2 Initial list to starboard

3.2.2.1 The Master, Second Officer and Chief Engineer were on the bridge when the initial incident happened. They heard a loud bang when a large wave struck and the ship began to list immediately. Water was seen spraying from the Butterworth openings on 3 Starboard wing tank; the covers of the openings having been displaced. The Master and Chief Engineer were very experienced officers, and their evidence on this issue is considered accurate and reliable. The Second Mate, although less experienced, is also considered to have given an accurate account of events, and was able to confirm that the list reached 10^{o} within two minutes, and the maximum, stated to be about 25^{o} within 10 minutes. The maximum angle will be further considered on the basis of theoretical calculations.

3.2.2.2 Other crew elsewhere in the ship confirmed the evidence of those on the bridge at that time, and on that basis it is considered that the ship was struck by a large wave at 1510 on 13 November, heeling 10^{o} to starboard within two minutes, and around 20° within ten minutes

3.2.3 Evidence of initial damage

3.2.3.1 On departure from Kerteminde, the only empty spaces of sufficient capacity to cause a large angle of starboard heel were 3 Starboard wing tank and 2 Starboard after wing tank. All other starboard wing tanks were filled with fuel oil cargo. The effect of flooding 3 Starboard wing tank and 2 Starboard after wing tank has been calculated. These calculations indicate that the flooding of 3 Starboard wing tank would result in a list of between 11.5^{o} and 12.6^{o} in still water. The effect of flooding 2 Starboard after wing tank would be a list of about 6.5^{o} in still water. The flooding of both 2 and 3 Starboard wing tanks would have resulted in a list of between 18^{o} and 19.6^{o} to starboard in still water. The crew reported a final list of 25^{o}, but this was only an impression and would have been hard to measure accurately given the rolling of the ship. It is considered that an angle of 18^{o} to 20^{o} is probably more correct.

3.2.3.2 The development of the starboard list was probably due to the filling of both 3 Starboard wing tank and 2 Starboard after wing tank which were both empty.

3.2.3.3 The crew who witnessed the list developing from the bridge could see no sign of structural damage to the hull. All they reported at that time was damage to the starboard cargo hose rail, damage to the starboard drip tray, the destruction of the starboard lifeboat and water spraying from the Butterworth openings at 3 Starboard wing tank. However, subsequent interviews with the helicopter pilots involved in the operation to evacuate most of the crew from the ship, later that afternoon, describe "a triangular shaped hole" at, or near the deck edge and extending below the waterline in way of No.3 starboard ballast tank. However, no photographic or video evidence has

November 14 2002 - General views of the starboard side

Figure 7

November 14 2002 - Damage to the starboard side (See enlarged views in Figure 9)

Figure 8

been made available to this investigation showing such a hole. At the time the pilots report seeing the hole, the ship had a substantial starboard list and the video evidence has shown that very little of the ship's side was being uncovered in way of 3 Starboard wing tank, even when the ship rolled. Whether the helicopter pilots could have seen a hole is doubtful.

3.2.3.4 The ship was also sighted in daylight when helicopters landed personnel on the ship on the morning of 14 November, including a surveyor from La Coruna Harbour Master's Office, but there is no report of any damage to the Prestige in the MRCC log. In a Spanish government report to the European Commission, the surveyor is quoted as observing a large opening in the starboard side at the level of the manifold measuring between 10 and 15 metres in length. However, according to the Master and the crew, the surveyor did not go on deck to assess the damage at any stage and therefore his evidence on what he saw must be treated with caution.

3.2.3.5 All available photographs of the ship taken while under towage have been examined. The number of photographs from which the nature of damage can be ascertained is extremely limited; nevertheless, it is possible to derive some relevant information from them. The photographic evidence confirms the displacement of the Butterworth covers and the damage to the starboard lifeboat. The photographs also reveal the extent to which the seas were breaking over the decks before the heel was corrected and the extent of the oil on the decks and superstructure. There are no still photographs available of the damage on 13 November. The earliest still photographs are a series taken on 14 November. These photographs (Examples are shown in figure 7) indicate that the side structure and deck edge in the region of 3 Starboard wing tank has severely deformed. A breach in the side shell plating cannot be seen in the photographs but these only show the upper part of the side shell the majority being out of view below the water surface. A breach in the side in the region of the cargo manifold seen by the Spanish surveyor may have existed below the waterline seen in the photographs. The hose rail, which is connected to the deformed deck edge, is also visibly deformed, as is the drip tray. These two items appear to have deformed simply as a result of the displacement of the deck. The starboard lifeboat is badly damaged.

3.2.3.6 Two of the photographs of 14 November (See figure 8) are of particular interest as they show that there was at that time a substantial setting down of the main deck edge over the length of 3 starboard wing tank. There is an associated deformation of the visible part of the side shell plating that is a strip of plating above the sea surface about 1 metre deep. The maximum deformation is at approximately mid length of the tank. The deformation to the deck and the side structure commences at approximately frame 72 that is one frame space forward of the tank's forward bulkhead and within 2 starboard wing tank (Figure 9 shows an enlargement of the relevant sections of the photographs in figure 8). The photograph indicates that at that stage the upper part of the forward bulkhead of 3 starboard wing tank must have been at least heavily deformed. The aft most extent of damage cannot be ascertained precisely from the photograph but it appears to be close to the aft end of the tank at frame 61. The photograph indicates that the deck is set down from the starboard side to about mid width of the wing tank. Clearly the photograph does not provide any direct evidence of the nature of damage to the internal structure of the tank or of damage below the sea surface. However, it does indicate that the initial damage was predominantly to that wing tank rather than to 2 Starboard after wing tank or to 4

starboard wing tank. The nature of the damage to the deck and the upper part of the side structure strongly suggests that the upper part of the web frames in the tank as well as the upper part of the forward bulkhead had all failed. Of course, this is all evidence of damage existing on 14 November and not at the time of the initial breach on 13 November.

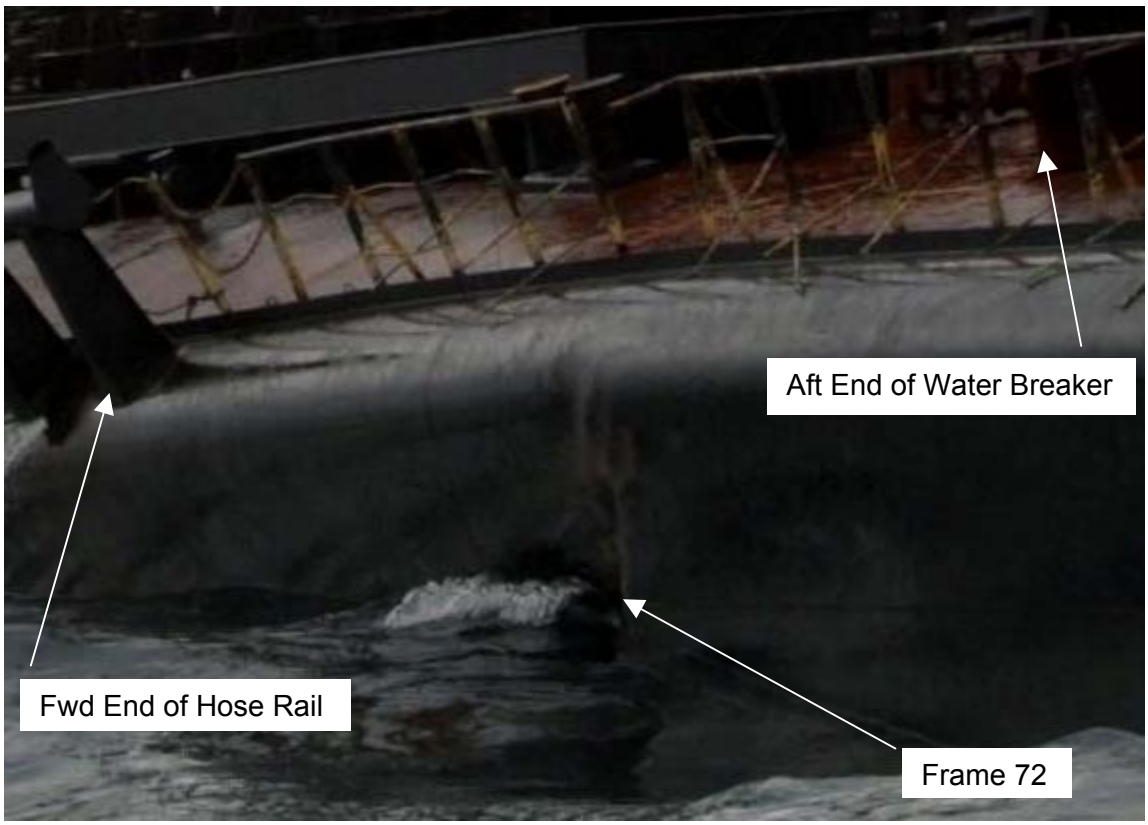
3.2.3.7 The fact that the witnesses saw damage to the hose rail and the drip tray at the time of the initial breach suggests that the deck was deformed at that time and that the damage was similar to that seen on 14 November. However, the possibility that there had been some increase in the degree of damage between the time of the initial incident and the time the photograph was taken on the following day has to be contemplated. The hole 10–15 m long as described by the Spanish surveyor on 14 November is different to the helicopter crews' description of a triangular shaped hole on 13 November. This might suggest an increase in extent of the breach between the two days, however, some doubt exists about the evidence of the hole from both of these sources (see 3.2.3.3-4).

3.2.3.8 The list of 10 degrees developing in 2 minutes implies that the initial breach was large. A simple flooding rate calculation indicates that a hole with a total area of about 6 to 12 square metres is necessary to explain the list initially increasing as quickly as it did. In conclusion there is no direct evidence of the nature of the damage that initially occurred and which caused the starboard list to develop. However, the direct evidence, albeit limited in nature, of damage observed later, taken with the crew evidence indicates that a substantial breach into 3 Starboard wing tank developed suddenly and that additionally the adjacent 2 Starboard after wing tank also flooded.

3.2.3.9 Further photographs taken by the Salvors on or after 15 November show that there was a progressive deterioration in the extent of damage to the starboard side structure in the region of 3 Starboard wing tank. The photographs indicate that the side shell structure and deck of 3 Starboard wing tank were progressively lost and that the side shell structure at the after part of 2 Starboard aft wing tank was also lost. The Salvors had concluded that the whole of the side shell of 3 Starboard wing tank was missing. The hose rail cannot be seen in any of the Salvors' photographs indicating that by the morning of 15 November this had been lost together with the deck edge plating to which it was attached. The deck structure though remained largely intact, although with the complete loss of side shell it was extremely vulnerable to further damage.

3.2.3.10 By the morning of 16 November the Salvors, on returning to the vessel, found that the majority of the deck plating of 3 Starboard wing tank was missing. The photographs indicate that in fact approximately half the width of the deck structure had torn away at that stage leaving the derrick and cargo manifold in place on the remaining deck structure of the tank.

3.2.3.11 No external damage to other wing tanks was reported, either initially or during the tow and none is apparent from the photographs of the ship. However, it is known that at some point in time 4 Starboard wing tank was breached and oil in that tank was lost as venting can be seen coming from the Butterworth openings in the tank from video footage taken on 15 November.



Forward most deformation of main deck edge and side in way of 3 Starboard Ballast Tank and 2 Starboard after wing tank

Main deck edge from aft end of 3 Starboard wing tank (Frame 61) to mid length of tank (Frame 65)

Enlarged views of the damage to the starboard side (See Figure 8)

Figure 9

3.2.4 Breach of 2 Starboard after wing tank and 3 Starboard wing tank

3.2.4.1 There is no evidence of a list developing prior to the vessel encountering a large wave and the subsequent sudden list to starboard. This suggests that the breach in the hull must have developed very quickly. Due to the lack of witness or other evidence of the precise nature of the initial breach in the hull it is only possible to propose a number of hypothetical ways in which a breach developed. It may therefore be helpful to explore whether or not there is anything about the evidence of the developing list that can assist further in establishing the likely location and nature of the initial breach.

3.2.4.2 It is clear from an analysis of the ship's stability that a breach must have occurred to 3 Starboard wing tank and 2 Starboard after wing tank within a few minutes of each other. The interval between the two tanks being breached must have been less than the ten minutes in which the starboard list developed. It therefore seems highly probable that there was a direct link between the breaching of these two tanks.

3.2.4.3 There are a number of possible sequences. Firstly, that there was a breach to the side shell plating plating of each of the two ballast tanks, allowing water to enter both tanks simultaneously. Such a scenario suggests that the breaches occurred either side of the transverse bulkhead (at frame 71) separating the two tanks, but from the same initial cause. The breaches need not have been simultaneous but one must have followed within a very few minutes of the other. An example of such a breach would be a tear in the shell plating starting in 3 Starboard wing tank progressing forward into 2 Starboard after wing tank.

3.2.4.4 Alternatively, there may have been firstly a breach of the side shell plating to one of the two tanks followed shortly afterwards by a breach of the transverse bulkhead separating the two tanks.

3.2.4.5 The fact that the witness evidence is that the Butterworth covers blew off 3 Starboard wing tank but not 2 Starboard after wing tank, in itself strongly suggests that the initial breach occurred in 3 Starboard wing tank. The loss of the Butterworth covers further suggests that there was a large increase in pressure inside the tank as water rushed in. This rise in pressure may have accounted for a breach occurring in the bulkhead between 3 Starboard wing tank and the empty 2 Starboard after wing tank. The other tanks surrounding 3 Starboard wing tank were full of cargo and their bulkheads would have been less prone to damage because of the counteracting pressure of liquids in them.

3.2.4.6 The fact that the list is reported to have been 10^{o} within two minutes and to have then increased more slowly to 20^{o} over a longer period lends weight to the scenario of a rapid flooding of 3 starboard wing tank and subsequent slower filling of 2 Starboard wing tank through a rupture of the bulkhead. However, on the basis of the observed rate of developing list alone, other mechanisms explaining the flooding of both tanks through breaches in the shell plating are equally plausible depending simply on the assumed size of rupture in each tank.

3.2.4.7 The indication that deformation to the deck was associated with an original leak into 3 Starboard wing tank suggests that there was a sudden large scale failure of the side structure of the tank. This is because the setting down of the deck implies a failure of the webframes within the tank which would have occurred with either a) a sudden loss of a relatively large section of side plating and immediate weakening of the tank's side structure or b) a large scale setting in of the side shell structure as a result of a weakness in the web frames and a consequent rupture of the plating which then progressively tore away. There is insufficient evidence to conclude on which of these two scenarios is the more likely.

3.2.4.8 The photographic evidence showing that on 14 November damage to the side shell extended forward into the first bay of 2 starboard after wing tank is consistent with a failure of the web frames in 3 starboard wing tank causing a large scale hinging down of the deck and consequent deformation of the upper part of the bulkhead at frame 71 and the adjacent side shell. Damage to the upper part of the bulkhead due to internal pressure caused by a breach in 3 starboard wing tank and consequent flooding of 2 starboard after wing tank is also consistent with this. In contrast, an initial failure of the bulkhead appears inconsistent with the observable maximum deformation occurring at mid length of 3 starboard wing tank. It also appears inconsistent with the witness evidence of damage to the drip tray and the hose rail that were clearly deformed when the deck set down.

3.2.4.9 It is very uncertain as to which of the cargo tanks, if any, initially leaked into the breached 3 starboard wing tank. The oil may have come from 4 starboard wing tank, 2 centre tank or 3 centre tank. There is no evidence as to the nature of the location or nature of the leak or leaks that may have developed in those tanks. However, it is likely that it developed as a consequence of damage to and flooding of 3 starboard wing tank and 2 aft starboard wing tank.

3.2.5 Summary of initial sequence of events

3.2.5.1 The most likely initial sequence of events is that the ship was struck by a large wave, which caused deformation to and a breach in the side shell of 3 starboard wing tank. The combination of a large wave and an empty tank would have exposed any potential weaknesses in that structure. After the breaching of 3 Starboard wing tank, the rise in internal pressure within the tank, in combination with deformation caused as a direct result of a collapse of the side and deck structure of 3 starboard wing tank, resulted in the breaching of the bulkhead between 3 Starboard wing tank and 2 Starboard after wing tank, flooding the latter tank.

3.3 Possible causes or sources of weakness in the structure

3.3.1 Explosion

3.3.1.1 The initial failure occurred in an empty ballast tank. Explosions in empty ballast tanks resulting from the leakage of oil or vapour from adjacent cargo tank are known to have occurred in other casualties. However, such incidents are extremely rare and normally result in fire and immediate massive structural damage. There is no such evidence in this case. In particular, with an explosion inside a ballast tank the

deck structure is prone to damage by being set up globally and again such damage did not occur. Furthermore, the fuel oil carried was of a heavy grade containing little volatile matter which would evaporate to form an explosive mixture. Consequently, explosion can be discounted as a possible cause of the initial damage with a high degree of confidence.

3.3.2 Collision with a floating object

3.3.2.1 According to the Spanish MRCC log, a ship in the vicinity of the Prestige was reported to have lost some of her log cargo overboard. Entries in the MRCC log indicate that a search was being made for logs on 18 November, and three logs were reported to have been recovered on the same day. Containers are washed overboard from ships from time to time, and they may be struck by passing ships.

3.3.2.2 Contact on the side of the ship of either a floating log or container may have been possible due to the heavy rolling motion then being experienced, but no such large object was seen from the bridge. If the shell plating were to have been ruptured the aperture is unlikely to have been of the size necessary to explain the rate of flooding that was experienced. Consequently, it is unlikely that the initial flooding was caused by contact with a floating object such as a log or container.

3.3.3. Contact damage associated with ship to ship operations (STS)

3.3.3.1 The ship acted as a storage ship for 131 days (22.06.02 to 30.10.02) while moored at St Petersburg prior to the final voyage. During that time barges delivered oil to the ship and tankers came alongside to load. The ship would have been at risk of contact damage by vessels coming alongside to discharge or load cargo. Such damage may occur to the side shell structure, particularly if relatively large vessels berth with excessive speed and or at an inappropriate angle. The damage in such cases is usually restricted to the localised setting in of the side shell plating with associated deformation or cracking of internal framing. No such external damage in the area of 3 Starboard wing tank was reported despite constant activity around the ship in both St Petersburg and Ventspils.

3.3.3.2 Photographs of the port side of the vessel taken after the incident on 14 November indicate that there was permanent deformation to the side shell plating in two locations (See figure 10 and the enlargement of the relevant portions of these photographs in figure 11). One location is immediately below the hose rail where there is very apparent setting in approximately 2.5 m below deck level. The second location is further forward in way of 1 Starboard wing tank and about 3 to 4m below deck level. These deformations appears to be contact type damage and to be of a magnitude sufficient to have resulted in deformation to web frames and longitudinals. Such damage was not reported prior to departure from St. Petersburg and it is possible that the damage to the port side happened during the long process of making tugs fast. It is known (see 2.6.7) that the tug Ria de Vigo was damaged during this operation. The position of the damage on the port side in way of the hose rail was probably too high to have been caused by fender damage during ship-to-ship transfer operations in St. Petersburg. In addition the Master did not Note Protest during the ship's stay, which would be the usual action of an experienced master if such damage was suspected.

3.3.3.3 If the side shell in way of 3 Starboard wing tank had been damaged at St Petersburg then it is possible to envisage a scenario in which damaged web frames were progressively weakened during the course of the voyage by the lengthening or developing of cracks by fatigue. On encountering a larger than normal external wave pressure the weakened web frames collapsed causing a rupture in the side shell plating and the setting down of the deck. It is therefore concluded that it cannot be completely ruled out that damage occasioned at St Petersburg was the cause of the initial breach.

3.3.4 Overstressing of hull during cargo operations

3.3.4.1 The ship was equipped with a loading calculator with which loading conditions could be investigated rapidly. The loading condition was checked regularly by the Chief Officer during cargo operations, including the condition on departure from Ventspils. It has been confirmed by further calculations that the ship was safely loaded at the beginning of the voyage. The highest shear force on the hull has been shown to be 62% of the maximum permitted value, this being at frame 51, at the forward end of the engine room. The highest bending moment was found to be 56% of the maximum permitted value, at frame 82, at the after end of No 1 Tanks. The evidence of the Chief Officer confirms that loading conditions were verified during storage operations to ensure that the hull was not overstressed, and this is considered reliable. Furthermore, the Master was a highly experienced officer, with a career spanning 30 years of successful and trouble-free tanker operation.

3.3.4.2 Overstressing can arise due to overpressure or underpressure in a tank caused by pumping cargo or ballast water with blocked air or ventilator pipes. If this had occurred, visible deformation of the deck and/or the ship's side would have been evident. No such damage was noticed prior to the incident. It is therefore highly unlikely that overstressing of the hull due to these causes during cargo operations caused any damage to the hull.

3.3.4.3 The possibility of the ship being overloaded for the Winter Zone has also been considered. On departure from Ventspils and Kerteminde the deadweights were 78,625 and 78,941 tonnes respectively. Both are under the permitted winter deadweight of 79,406 tonnes. The draught leaving Kerteminde was 13.70 m, less than the winter draught of 13.763 m. No increases in deadweight occurred during the passage and the ship was therefore not overloaded during the passage from Ventspils.

3.3.5 Bottom Damage

3.3.5.1 There is no evidence of the ship having grounded at any time since completion of the last dry-docking. This took place at the time of the 5th. Special Survey in April and May 2001. Sufficiently severe damage to explain a breach of the bottom plating large enough to cause rapid flooding is unlikely to have gone unreported or unnoticed in the period between the last dry-docking and beginning of the final voyage.

3.3.5.2 It is also unlikely that pre-existing bottom damage would have resulted in the type of damage which subsequently occurred to the side shell structure.

General views of the port side showing setting in of shell plating

(See enlarged views in Figure 11)

Figure 10

Setting in of shell plating beneath hose rack on port side of the vessel (Between frames 67 and 69)

Setting in of shell plating at Frame 85 on port side of the vessel

Enlarged views of port side showing setting in of shell plating (See Figure 10)

Figure 11

3.3.6 Fatigue

3.3.6.1 Fatigue cracking of the internal structure propagating into the side shell plating is not uncommon in tanker hulls. However, such cracking usually commences with a crack of very limited length and width causing leakage of limited extent. In order to explain the rapid filling of the tanks there would need to have been a very long crack in the side shell plating. A fatigue crack may however, in particular circumstances, cause the initiation of an unstable fracture. This is a fracture rapidly extending in length, such as a brittle fracture or a fracture caused by an incipient weakness and/or massive overloading. Such an unstable fracture in the side shell plating would provide an explanation for the filling of the two wing tanks. An unstable fracture also affecting web frames within the tank might also explain the initial failure.

3.3.6.2 The theoretical possibility of fatigue cracks developing in No 3 Wing Tanks was investigated by the ABS following the loss of the ship. This was carried out using the scantlings of the hull as gauged at the 5th. Special Survey in May 2001, and using the United Kingdom Department of Energy S-N Curves which are widely accepted internationally as giving the most appropriate coverage for ships. Based on a 26 year fatigue life, it was found that some structural details of the Prestige did not satisfy the current ABS fatigue strength requirements for new ships. However, it should be noted that there were no fatigue strength requirements when the Prestige was built, as the methodology was not sufficiently developed for incorporation in classification society rules.

3.3.6.3 The ship had no history of fatigue cracking of the side or bottom shell structure, and no fatigue cracking was found in 3 Starboard wing tank or 2 Starboard after wing tank during the 5th. Special Survey in May 2001. There are two factors that may account for this:

i. The ABS fatigue strength requirements are based on a ship operating in the North Atlantic for 20 years. From 1996 onwards, it is known that the Prestige traded very little in the North Atlantic and in fact spent considerable time in port acting as a storage ship. It is evident from the type of ship that a considerable time before 1996 would have been spent in waters much calmer than the North Atlantic. The fatigue life of the structure would be expected to be much greater than that predicted for North Atlantic conditions.

ii. An additional factor which would extend the fatigue life of the structure in 3 Starboard wing tank is that many of the side longitudinal frames were renewed at the 4th and 5th Special Surveys in February 1996 and May 2001 respectively. These renewals were primarily due to corrosion wastage and not fatigue damage. However, there may well have been weakness due to fatigue in the surrounding structure.

3.3.6.4 Both the theoretical calculations carried out by ABS and the survey history of the ship suggests that fatigue cracking was unlikely to have been present in any significant degree prior to the initial incident. While it is considered that fatigue alone is unlikely to have been the cause of the breach in the shell plating in 3 Starboard wing tank, it may have been to a contributory factor, particularly in the circumstances

described in the first paragraph of this section.

3.3.7 Failure of transverse bulkhead between 2 Starboard after wing tank and 3 Starboard wing tank

3.3.7.1 The Prestige was required to maintain 2 Port and Starboard after wing tanks and 3 Port and Starboard wing tanks empty when the ship was in the loaded condition. All centre tanks and the remaining wing tanks were filled with fuel oil cargo. The transverse bulkhead at frame 71 between 2 Starboard after wing tank and 3 Starboard wing tank had no cargo or ballast water on either side.

3.3.7.2 The bulkhead at frame 71 was of corrugated construction with three horizontal girders. In the report of an investigation conducted by the French Shipping Accident Investigation Bureau (BEAmer) it is tentatively suggested that collapse of this corrugated bulkhead may have caused the initial structural failure. It is argued that deterioration of the side sections of the bulkhead through corrosion might have led to buckling and collapse of the bulkhead under compression of oil in the centre oil tank and sea water pressure on the shell plating. The scenario envisaged is that the shell plating was forced in and cracked followed by the buckling and collapse of the adjacent web frames with tearing of the side shell plating.

3.3.7.3 There are difficulties in attributing the flooding of the tanks to this scenario. The collapse of the corrugated bulkhead sufficient to give rise to a large rupture of the side shell plating would have needed a large scale failure of the corrugated bulkhead and adjacent web frames. Such a failure would have required a massive weakness of the overall structure of the bulkhead.

3.3.7.4 The upper two thirds of this bulkhead was completely renewed at the 5th. Special Survey in Guangzhou in April/May 2001, eighteen months prior to the casualty. The gaugings of steel on the remainder of the bulkhead were within allowable limits and considered satisfactory by the classification surveyor. This suggests that the bulkhead would not have been weakened by corrosion by the time of the incident, and that it should have been of sufficient strength to withstand the loading experienced on the final voyage.

3.3.7.5 It is known from the photographic evidence that at some early stage at least the upper part of the bulkhead was damaged and the side shell is set in at that location. However, taken as a whole the available evidence suggests that the initial failure started well aft of the bulkhead and that the bulkhead was damaged as a consequence of the damage to 3 starboard wing tank side shell. It however cannot be ruled out on available evidence that some sort of failure of the bulkhead contributed to the initial breach of 3 starboard wing tank.

3.3.8 New for old steel replacement

3.3.8.1 Extensive repairs were carried out in 3 Starboard wing tank during the 5th. Special Survey at Guangzhou in April and May 2001 and also during the previous Special Survey at Constanza. In 1996 the greater proportion of most of the web

frames were renewed in 3 Starboard wing tank. The portions of the web frames above the cross ties in the tank were again renewed in 2001. Many side longitudinals were renewed in 1996 and again in 2001. The other main renewal of steel in 2001 was the plating of the transverse bulkhead at frame 71 between 3 Starboard wing tank and 2 Starboard after wing tank. In accordance with normal Classification Society practice, no record exists of the thicknesses of steel removed in 2001. The rate of corrosion between the previous Special Surveys cannot therefore be estimated for the steelwork replaced on both occasions.

3.3.8.2 No side shell or bottom plating in either 2 Starboard after wing tank or 3 Starboard wing tank was renewed during the 1996 or 2001 Special Surveys. Any influence of repairs on the cause of the rupture of either the bottom or side shell plating could not have been a direct result of repairs to the plating itself. It could only have been as a result of repairs to the internal structure, namely the web frames, side longitudinals or bulkhead plating. There were no renewals of steel in the internal structure close to the bottom shell structure in 2001, therefore repairs would only have influenced the cause of a rupture in the side shell plating.

3.3.8.3 The repairs in 2001 were carried out under the survey of ABS using approved materials. There is no direct evidence concerning the quality of the repairs carried out in 1996 except that they were carried out to the satisfaction of ABS. It is likely however that any significant defects in those repairs would have come to light either before or during the 2001 Special Survey.

3.3.8.4 Whether or not repeated and relatively large-scale repairs are capable of introducing a weakness into a structure is open to question. It is known that residual stresses resulting from welding particularly in large-scale repairs may be a factor in the initiation and development of unstable fractures. The presence of residual stresses would not be revealed in the survey and testing of the new work using current methods of inspection. The connecting of new steel to older corroded steel (albeit within acceptable limits) may introduce areas of stress concentration at the interface between old and new material. It may, as well, accelerate the rate of corrosion in the remaining older uncoated steel. The true extent and effect of such factors in causing weakness in the context of this incident is unknown but might warrant further investigation with respect to the conduct of repairs in general.

3.3.9 Corrosion

3.3.9.1 The potential for the weakening of the structure of ballast tanks of tankers because of corrosion is a well-documented problem area. The reported initial breach of 3 Starboard wing tank and 2 Starboard after wing tank is not, as far as can be ascertained, inconsistent with such a weakness. However, it is necessary to consider whether it was likely that corrosion could have been present in the tank structure so as to cause a weakness sufficient to explain the initial breach.

3.3.9.2 At the Special Survey in 2001 substantial quantities of steel in 3 Starboard wing tank were found to be corroded beyond the acceptable limit and, as a consequence, were cropped and renewed. On completion of the survey the attending ABS surveyors were satisfied that the corrosion levels of steel that had not been

renewed were within acceptable limits. This is confirmed by the thickness gauging results for the tank which show wastage in the remaining structure significantly below the level at which renewal would have been necessary.

3.3.9.3 A period of about 18 months had elapsed between the time of the Special Survey and the time of the incident. During this period of time further loss of thickness of the steelwork would have taken place. Rates of corrosion in tanks used for water ballast can be high, particularly to internal structures such as the web plates of web frames and longitudinals as they are subject to simultaneous corrosion on two faces. These can be significant when the structure is uncoated as in the case of 3 Starboard wing tank. Furthermore, corrosion may be exacerbated if heated cargo is carried in adjacent tanks, which was the case in this instance. However, for much of the period it appears that the tank was empty and any corrosion should not have been excessive. In addition, as the vessel was operating in largely sheltered conditions it is unlikely that corrosion would have been as active as if the ship had been subject to sea going stresses. How much loss of thickness would have occurred within this period cannot be determined with certainty, but it is considered unlikely that the amount of corrosion would have been sufficient by itself to have caused the initial structural failure.

3.3.9.4 Anodes were fitted to this tank at the 5th. Special Survey, but as the tank was empty for much of the period since the Special Survey they would have been of limited benefit.

3.3.10 Summary of possible sources of weakness in the structure

3.3.10.1 In summary, it has not been possible to identify a specific reason for the initial failure of structure resulting in the flooding of 3 Starboard wing tank and 2 Starboard after wing tank. However, there are a number of possible causes of weakness to the structure of 3 Starboard wing tank that cannot be ruled out as having the potential to have led to the initial failure, acting individually or in combination. They are:

i. Contact damage associated with Ship-to-Ship transfer of cargo

ii. Fatigue.

iii. Failure of the transverse bulkhead between 2 Starboard after wing tank and 3 Starboard wing tank

iv. New for old steel replacement.

v. Corrosion

3.4 Review of surveys and inspections of the ship

3.4.1 As a 26 year old ship, the Prestige was subject to the survey requirements of the classification society, ABS, and the Enhanced Programme of Inspections of the SOLAS and MARPOL Conventions. The ship was duly surveyed and certificated in

accordance with these requirements, operated by responsible managers and manned by a well qualified crew with very experienced senior officers, and yet suffered structural failure. Consideration of the survey and inspection arrangements for the ship is, therefore, necessary.

3.4.2 Classification Society Surveys

3.4.2.1 The classification society, ABS, made available all survey records. The managers of the ship also provided extensive information on the operation and maintenance of the ship.

3.4.2.2 Immediately following the loss of the ship ABS requested the International Association of Classification Societies (IACS) to carry out an audit of the survey records relating to the ship. Observers from the International Maritime Organization, the European Commission, INTERTANKO, as well as the Bahamas Maritime Authority witnessed the audit. The audit was not confined to a scrutiny of documents, but included interviews with the surveyors who had carried out the surveys on the ship in Guangzhou in 2001 and Dubai in 2002. The shipyard in Guangzhou where the last Special Survey and related repairs were undertaken was also visited. The auditors concluded that the surveys were carried out in a thorough and diligent manner but recorded some reservations about the ABS survey arrangements then in force. These reservations concerned: documentation on board ships for Enhanced Survey Procedures (ESP); treatment of ballast tanks; the loading instrument; the hydrostatic testing of cargo tanks; and the IOPP Certification documentation. The observers did not dissent from the findings of the auditors.

3.4.2.3 The Guidelines on the Enhanced Programme of Inspections during Surveys of Bulk Carriers and Oil Tankers require that a survey report file be maintained on board ship. This requirement is mirrored by IACS unified requirement UR Z10.1, and incorporated in ABS Survey Rules. Surveyors are expected to consult the onboard information in planning surveys. This was not done during the Annual Survey at Dubai in May 2002. The surveyor in question had, however, conducted the previous annual survey of the ship in 2000, and had previous knowledge of the ship, on which he relied.

3.4.2.4 As from 1 July 2001, IACS Unified Requirement UR 10.1 required any water ballast tank adjacent to a cargo tank fitted with any means of heating to be examined internally at annual surveys. This implemented the requirement of the Enhanced Survey Procedures. It was also a requirement of ABS Rules at the time of the annual survey in May 2002, and was incorporated into the check sheet used by ABS surveyors carrying out annual hull surveys. The ABS survey status documentation available to the surveyor at the time did not contain any indication of whether or not a ship is fitted with a means of heating. When the annual survey was carried out, both 2 Starboard after wing tank and 3 Starboard wing tank were ballasted. The surveyor apparently inquired of the Master and understood that a means of heating was not fitted. This may have been a language misunderstanding. Although 2 Port and Starboard after wing tanks were filled with ballast at the time of the survey, they could have been made available for survey if required.

3.4.2.5 The surveyor recorded that a means of heating was not fitted and accordingly did not inspect any ballast spaces at the annual survey in 2002. The condition of 2 Port and Starboard after wing tanks coatings was recorded as fair at the previous survey. No inspection of these tanks was required under ABS or IACS Rules for ballast tanks in ships not fitted with a means of heating. The presence or absence of a means of heating is only of relevance to the inspection of 2 Port and Starboard after wing tanks; 3 wing tanks were used for both cargo and ballast, and were accordingly designated as cargo tanks under ABS and IACS Rules. There was accordingly no ABS or ESP requirement for 3 wing tanks to be inspected at the Annual Survey.

3.4.3 Tank testing

3.4.3.1 Cargo tanks were tested to the deck level during the 5th. Special Survey at Guangzhou in 2001. The ABS and ESP requirements are for testing of these tanks to the top of the access hatch. The difference between the actual and required pressure head is of the order of 1m, or about 5% of the required value. The IACS Auditors considered that the actual test head was adequate, while recognising that some tanks were not tested to the full survey requirement. The shortfall in the test head for the cargo tanks is not considered significant in relation to the incident. All ballast tanks were tested to the full regulation pressure head; including 2 after wing tanks and 3 wing tanks, even though the latter were classed as cargo tanks. This took place prior to the bulkhead repairs in 3 wing tanks. On completion of the repairs, these tanks were subjected to an air pressure test, this complied with ABS requirements. Although the initial pressure test took place prior to the repairs in the tanks, the structure would be expected to be in better condition following the steel renewal.

3.4.4 Status and condition of 3 wing tanks

3.4.4.1 3 wing tanks were subject to a close-up inspection at the 5th. Special Survey in 2001. No further survey of these tanks was required under the ESP procedures until the Intermediate Survey, which could have been carried out at either the second or third annual survey following the Special Survey. There was therefore no requirement for 3 wing tanks to be inspected at the annual class survey carried out in 2002.

3.4.4.2 3 wing tanks were uncoated, and if classed as ballast tanks, they would have been subject to examination at annual surveys. The need for thickness measurements at annual surveys is left to the discretion of the surveyor.

3.4.4.3 The managers clearly were concerned at the rate of corrosion in these tanks, for it was on their own initiative that anodes were fitted in them at the 5th. Special Survey in 2001. Cargo tanks are subject to a less stringent survey regime because they are not subject to the more rapid corrosion that occurs under ballast conditions. The steelwork in cargo tanks is also afforded some degree of protection by the coating of cargo oil remaining after discharge. The Hydrostatic Balance Loading Manual was approved on 7 March 2001, and until that date 3 wing tanks would have been used as clean ballast tanks. They could have been used for cargo following approval of the Manual, but were used on only one occasion when a cargo of crude oil was carried from Kharg Island to Karachi in March 2002.

3.4.5 International Oil Pollution Prevention (IOPP) Certificate

3.4.5.1 When the renewal survey for the issue of the IOPP Certificate was completed at Guangzhou in 2001, the ABS surveyor correctly issued two supplements with the interim certificate. One supplement authorised COW operation and the other CBT operation. Due to an administrative oversight in the ABS Houston office, only the COW supplement was attached to the full term certificate. Although the two supplements had been issued with the interim certificate, they would, on a strict interpretation, not have been valid beyond the term of the interim certificate that is to 18 October 2001. This is however an administrative matter, and there is no doubt that the ship was correctly surveyed for and complied with the conditions for the issue of the full term certificate with both COW and CBT operation.

3.4.6 Effectiveness of surveys

3.4.6.1 The overall conclusion of the IACS auditors was that the surveys were carried out in an effective manner by qualified and experienced surveyors. The audit report does however contain observations on some aspects of the surveys as described above. As there is a reasonable degree of certainty that the initial structural failure occurred in 3 Starboard wing tank, the survey of this tank is the most critical.

3.4.6.2 Strength calculations for the transverse area of the deck and bottom flanges of the hull girder were carried out and found to be satisfactory; this included girth belt measurements in 3 wing tanks and 2 Port and Starboard after wing tanks. The calculations were not retained in accordance with the current practice and requirements. The IACS Auditors concluded that the thickness measurements taken at the 5th. Special Survey were consistent with those taken at the 4th. Special Survey. Most of the steel replacement at the Special Survey took place in 3 wing tanks. These were uncoated tanks, and the surveyor devoted considerable attention to them. The repair procedures were found to conform to ABS requirements and were carried out under class supervision. There is therefore no indication of any deficiency in the survey or repair procedure that might account for any weakness in the structure. The records do not show the thickness of the wasted areas before renewal, so that there is no information on extent of wastage in the areas of steel renewed. This information might have been worthy of scrutiny as a significant number of longitudinals and web frames renewed in 3 wing tanks had also been renewed at the previous Special Survey in 1996. It should be noted that a requirement to evaluate longitudinal strength did come into effect until 1 July 2002.

3.4.6.3 The presence of a means of heating in the cargo tanks is in this case relevant only to the requirements for survey of ballast spaces adjacent to tanks with a means of heating at annual surveys. It was an ABS and IACS Unified requirement at the time of the Annual Survey in May 2002 that a ballast tank adjacent to a tank with a means of heating should be examined annually. A means of heating was fitted in the cargo tanks, and accordingly 2 Port and Starboard after wing tanks should have been examined.

3.4.6.4 It is accepted that some aspects of the survey procedure were not totally in accordance with requirements. However, none of the issues are considered to have any significant link with the initial structural failure in 3 Starboard wing tank. The

audit conducted by IACS did however indicate some issues on which action was required and it is understood that ABS has addressed these issues.

3.4.7 Loading Instrument

3.4.7.1 There was no statutory or international requirement for the ship to be provided with a loading calculator. The owners had however provided computer software to carry out loading calculations and presented it to ABS for approval. It was a class requirement that any loading calculator provided should be approved; such approval was granted on 21 June 1999, subject to a test calculation being carried out. A calculation was carried out to the satisfaction of the ABS surveyor during the 5th. Special Survey in 2001.

3.4.7.2 The ABS checklist in use at that time provided the surveyor with the options of recording "Yes", "No" or "Not applicable". The surveyor at the Special Survey entered "Yes", confirming that the loading calculator was fully approved. The checklist made no provision to indicate that the loading calculator was not a requirement, and the surveyor at the Annual Survey indicated "Not applicable". It is clear that the loading programme met all ABS requirements and its use on board the Prestige was fully justified. The discrepancy in the recording of the status of the loading calculator in no way contributed to the casualty. The loading programme was used by the crew in evaluating the loading condition of the ship during the stay in St. Petersburg, for the final voyage and in assessing the effect of ballasting 2 Port after wing tank and 3 Port wing tank to reduce the list.

3.4.8 Inspections

3.4.8.1 The Port State Control, SIRE and other inspections carried out before the incident gave no cause for concern about the general condition of the ship and no reason to believe that special internal inspection of any tank was necessary. (Details of surveys and inspections are contained in Appendices C and G).

3.4.8.2 The two inspections by the Master and Chief Officer during the ship's stay in St. Petersburg, which were carried out in accordance with the Company's instructions, are therefore of particular significance. They saw no problems in the tank, although they would not have had a means of making any close-up inspections of the ship's side. Similarly, even if other inspectors had entered the tanks they would probably have been unable to make close-up inspections of the majority of the structure.

3.4.9 Summary of surveys and inspections

3.4.9.1 Despite some discrepancies, as noted earlier, the surveys were properly conducted and the repairs carried out in full accord with the best current industry practice. Some room for possible improvements has come to light but, apart from the points noted, the conduct and performance of ABS was completely in accordance with its own rules and those of IACS.

3.4.9.2 Inspections were carried out on numerous occasions with no indication of problems being revealed.

3.5 Management of the ship

3.5.1 The company and ship audits carried out for ISM Code Certification provide a ready means of examining the quality of the management both ashore and afloat. All audits for both managers of the Prestige were carried out at the prescribed times, and at no time was the issue of a company or ship certificate in question. As would be expected, some non-conformities were recorded by the auditors. These were mainly failures of a minor nature such as not recording certain information as required by the Management System. At the last audit of the company conducted before the incident, 31 May 2002, no major non-conformities and eight minor non-conformities were issued (See Appendix C). In each case action was taken by the managers and ship's senior officers to rectify the non-conformities and this was done either during the audit or within the period allowed by the auditors.

3.5.2 A number of operational manuals for both the Universe Maritime Limited and the Prestige was scrutinised during the course of the investigation. All of them were found to be well written and contain clear instructions and guidance on safe operational practice. Manuals such as Crude Oil Washing were approved as meeting international Convention requirements.

3.5.3 Following the loss of the Prestige, Bureau Veritas (BV), as the company's and the ship's ISM auditors, conducted an audit of Universe Maritime at the request of the BMA. No major non-conformities were found and any minor issues were resolved by prompt action by Universe Maritime. The Document of Compliance issued to Universe Maritime remained in force.

3.5.4 In addition to the audit by BV, two senior officers of the BMA visited the offices of Universe Maritime at different times soon after the casualty. Detailed discussions were held with the technical managers, both regarding the casualty and the management of the ship. The BMA officers formed the view that the managers of the Prestige were highly responsible and competent, and had taken all reasonable and practicable measures to maintain the ship in sound condition.

3.5.5 The Emergency Plan of Universe Maritime was activated as soon as the company was made aware of the incident. They promptly arranged for towage and for a local agent to be appointed. Throughout the incident the company cooperated fully with the various authorities. During the Bahamas' investigation, all information requested has, as far as we are aware, been made available and the company has assisted all bodies investigating the loss.

3.6 Rescue and Salvage

3.6.1 Evidence of rescue and salvage

3.6.1.1 Good evidence is available from the crew who remained on the Prestige from the time of the initial incident until the final crew evacuation on 15 November. Eleven situation reports were sent to the BMA during the emergency which give very brief details of events as they occurred at various stages in the salvage. Additionally, key personnel from the Spanish rescue services were interviewed and provided the

investigators with comprehensive information. Other information appeared on the website (www.cadenaser.com/especiales/documentos /Sasemar). This consisted of: the MRCC log; transcripts of certain VHF radio calls to and from the Prestige; and copies of radar plots understood to have been produced by Finisterre Traffic Surveillance radar.

3.6.1.2 The MRCC log contains much detailed information on helicopter movements and communications with tugs, but it is incomplete in that it contains no details of communications between the Finisterre MRCC, Madrid MRCC, SASEMAR, La Coruna Harbour Master, and the Galician government Emergency Committee. Subsequent interviews with personnel from the Spanish maritime administration based in Madrid and La Coruna have been useful in filling in some of these gaps.

3.6.1.3 The copies of radar plots from Finisterre Surveillance Radar, obtained from a website (These are reproduced in Appendix I), appear authentic and are useful in fixing the track followed by the Prestige as she drifted towards the Spanish coast and thereafter under towage while within radar range.

3.6.1.4 As regards procurement of salvage for the Prestige, the managers have provided full documentary evidence of the efforts they made and communication with the Master and Salvors. The Salvors have provided a statement by the Salvage Master, a daily chronology of events, daily situation reports, a copy of a letter from the La Coruna Harbour Master, and some photographs.

3.6.2 Initial response on ship

3.6.2.1 When the Prestige began to heel rapidly to starboard, the Master realised very quickly that a serious situation was developing, and ordered that the General Alarm be sounded and that a distress message be sent. The crew response to the General Alarm was immediate. Apart from those on duty on the bridge, all other crew obtained lifejackets and proceeded to the boat deck on the port side of the ship.

3.6.2.2 The Master was entirely justified in believing the ship to be in danger. In these circumstances the transmission of a distress signal was correct and would have been prudent even in less extreme circumstances. The initial actions taken in response to the listing of the ship were in accordance with the emergency procedures contained in the Safety Management System, though full compliance was rendered impossible due to the heavy list and sea breaking over the decks. It would not have been possible, for example, to proceed on deck to verify tank soundings or operate valve controls on the starboard side of the deck.

3.6.3 Machinery

3.6.3.1 Until the time of the initial incident, all machinery was operating normally, although the main engine was on reduced speed due to the severity of the weather. The main engine and boiler stopped when the ship heeled rapidly. Although the angle of heel has been calculated to be somewhat less than that reported, the ship was also rolling; the automatic shutdown of the main engine and boiler was probably triggered by critical values being exceeded at the extreme angle of roll.

3.6.3.2 After the initial muster in response to the General Alarm, the Chief Engineer, with assistance from his officers and engine room crew, were able to restart the main engine on diesel oil. It appears to have continued to run for only a short period of time, possibly due to the shifting of a spare cylinder cover which was alleged to have damaged part of the fuel system or the continued list and heavy rolling. The generator had not stopped, and electrical power was available throughout the salvage efforts. If the boiler had been restarted, it would probably have cut out again due to critical values again being exceeded. Without the boiler the cargo pumps, mooring winches and windlass were without power.

3.6.4 Correction of heel

3.6.4.1 In still water a heel of 20 degrees would be considered excessive, with the starboard side of the main deck under water. Additionally, this was a most severe period of weather. Seas were breaking over the starboard side of the main deck and the poop, making it dangerous for crew to leave the protection of the higher decks of the accommodation. Water was also penetrating the accommodation and finding its way into the engine room. The ship would have been very difficult to manage in these conditions, whether under her own power or under tow. It was therefore highly desirable to have the heel reduced to a more manageable angle.

3.6.4.2 It would have been preferable to have righted the ship by transfer of cargo to avoid increasing the load on the damaged hull. All centre and wing cargo tanks were full. The only way to reduce the heel by transfer of cargo would have been to shift cargo from a starboard wing tank to 3 Port wing tank which was empty. Transfer of cargo to 2 Port after wing tank would not have been possible as this tank was only connected to the ballast piping system and had no connections to the cargo system. Transfer of cargo to 3 Port wing tank would have required crew to go on to the starboard side of the main deck to operate the valve controls for the starboard wing tanks. This area of the deck was awash with breaking seas, and therefore not accessible without high risk of injury or loss of life. The Master was therefore faced with the choice of leaving the heel uncorrected or reducing it by filling 2 and 3 Port wing tanks with sea water by gravity flow. This was possible as the port side of the deck was accessible, though dangerous, and the crew was able to open the valves to these tanks and return aft in relative safety.

3.6.4.3 The Master was aware of the effect of ballasting the port tanks, but could not quantify it immediately as the desk top computer on the bridge was thrown to the deck and damaged when the ship rolled violently as the heel began to develop. It was some time later that the Chief Officer was able to access the ship's Loadmaster instrument and establish that the maximum shear force was 105% of the normal operational permissible value, and the maximum bending moment 121% of the normal operational permissible value.

3.6.4.4 The Master was faced with an immediate situation in which he had to decide quickly whether or not to correct the heel by ballasting. His decision was justified, and the effect on the loading of the hull acceptable as it made the ship more manageable both for the crew in connecting towlines and the tugs in towing the ship. In view of the difficulties experienced in connecting the tow after the list had been substantially reduced, it is doubtful if any towage would have been possible had the

port tanks not been filled. His judgement is supported by the decision of the Salvage Master not to attempt to pump out the ballast in 3 Port wing tank. This decision was taken following discussions with the Smit Salvage naval architect, who also pointed out that a starboard heel would render the damaged part of the hull more vulnerable.

3.6.5 Response of Search and Rescue (SAR) authorities to the distress alert

3.6.5.1 The response of the Spanish authorities to the distress call was prompt. After confirming that the distress was genuine, they alerted all ships in the vicinity, sent the tug Ria de Vigo to assist and helicopters to evacuate the crew. The ship Walili arrived on scene within about 40 minutes of the distress alert and the first helicopter one hour later. Some crew were taken off by the first helicopter and the remainder by the second helicopter at 1805, about 2½ hours after the distress alert. At that time the outcome was very uncertain. The ship was still listed heavily, without main engine power, in severe weather and drifting towards Spanish coast. The decision to evacuate facilitated a timely operation by the rescue services and assured the safety of all but the three crew members who remained on board. The decision of the Master to request evacuation when he did allowed the operation to be completed while the ship was some way off the coast. The outcome might have been much less favourable had evacuation been delayed and the tugs unsuccessful in keeping the ship from drifting onto the shore.

3.6.5.2 The decision of the Master, Chief Engineer and Chief Officer to remain on board meant that they faced a hazardous and uncertain situation. In doing so they were available to communicate with the rescue services and provide information on the ship and her equipment. They also performed outstanding work in assisting the tugs to establish a tow in atrocious conditions throughout the night of 13 November. It would have been understandable if they had opted for evacuation with the rest of the crew and their decision to remain on board and the work they performed in arduous conditions deserves commendation. The Master realised before any tugs arrived on scene that he would need assistance on the Prestige to connect the tow and his repeated requests resulted in such assistance being provided, although not for some hours.

3.6.5.3 Notwithstanding the exemplary efforts of everyone on the vessel to connect a tow forward during the evening of the 13th and early morning of the 14th November, under very difficult conditions, it is open to question whether an attempt should have been made to deploy the stern towing pennant. Whilst the Master maintains that the weather conditions, combined with a slippery, oily poop deck, made this impossible, video evidence held by the Spanish authorities and taken by one of the rescue helicopters during the evacuation of the crew during the early evening of the 13th November, suggests that an attempt to deploy the stern towing pennant should have been possible. Certainly, as the list to starboard reduced during the evening of the 13th November it should have been easier to access the emergency towing equipment on the poop deck. However it was dark when the tug arrived to make fast and with only three crew members on board it may have appeared to be too difficult. In addition, when the salvage team attempted to deploy the equipment in daylight with a much larger group of people available they had some difficulty in achieving a successful deployment.

3.6.5.4 It is considered that there was a timely and effective response by the Spanish authorities to the Master's request for evacuation of the crew. The MRCC was also responsible for tasking the ship Walili to proceed to the assistance of the Prestige. The assistance of Walili was not required, but would have been available had evacuation become necessary before the arrival of the helicopters. Walili was also able to provide some information on the condition of the Prestige in addition to that provided by the Master.

3.6.5.5 The movements of the tug Ria de Vigo were plotted by Finisterre Surveillance Radar. The tug was cruising about 20 miles W of Pta. Remedios, at around 1515 when the distress signal was transmitted. It is understood that Ria de Vigo was on charter to SASEMAR at the time. The positions of Ria de Vigo at 1400 and 1502 are within one mile of each other, suggesting the ship was cruising at slow speed in the vicinity of this position. The entry in the MRCC log indicates that Ria de Vigo was tasked at 1534 by the MRCC to proceed immediately and connect a towline to the Prestige. The distance from the Prestige at that time was 24 miles.

3.6.5.6 Between 1534 and 1600, Ria de Vigo made a distance of 3 miles on a near W'ly course. The Finisterre Radar plots indicate that the W'ly course was maintained and Ria de Vigo made a distance of 6 miles between 1600 and 1700. At that time the Prestige was 14.5 miles WNW of Ria de Vigo. Course appears to have been altered around 1700, and Ria de Vigo made good a course directly towards the Prestige at a speed of 10 knots between 1700 and 1800. The radar plots indicate Ria de Vigo was 4.4 miles SE of the Prestige at 1800 and 3.3 miles WNW at 1900. This is consistent with the VHF transcript entry at 1817 in which Finisterre Rescue Centre advised the Prestige that Ria de Vigo was then three miles away.

3.6.5.7 It appears from this evidence that Ria de Vigo passed close to the Prestige at about 1830 on 13 November. This is supported by the entry in the MRCC log at 1830 (1730 UTC) in which it is recorded that Ria de Vigo observed that the ropes trailing over the stern of the Prestige were mooring ropes and not an emergency towline. It is also consistent with the evidence of the Prestige's officers.

3.6.6 Engagement of Salvors

3.6.6.1 The managers of the Prestige first learned of the incident when the Master called by INMARSAT telephone at 1650 on 13 November. Until that time he had been preoccupied with the declaration of distress, communication with the MRCC, and correcting the list. The Master spoke to the Operations Manager of Universe Maritime Inc. and briefed him on the situation. The Operations Manager immediately activated the Company Emergency Response Plan and contacted three major international salvage firms to find out if they had any tugs available in the vicinity of the Prestige. One of these had no tug available and a second had a tug 150 miles away. Smit Salvage was the third Salvor contacted and they advised that they could obtain the services of Ria de Vigo on a sub-contract basis. By choosing Smit Salvage, the Operations Manager rightly believed that assistance would be provided for the Prestige in the shortest possible time.

3.6.6.2 Universe Maritime and Smit Salvage verbally agreed on a salvage contract by telephone and the Operations Manager telephoned the Master at 1920 on 13 November to advise him that a salvage contract was about to be agreed. At that time Ria de Vigo had not offered to make a towline fast. A formal initial offer to provide salvage services was tendered by a Smit Salvage facsimile at 1921. It is understood that some clarification was required as to the availability of Ria de Vigo on a sub-contract basis. This was resolved and a formal offer was sent to Universe Maritime Inc. by facsimile at 1941. This was immediately accepted by telephone. The documentary evidence available confirms that the salvage agreement was concluded at 1941, and the Salvors immediately started their preparations.

3.6.6.3 While the Master had been previously advised that Universe Maritime were negotiating with Salvors, he could not be contacted immediately by the Operations Manager on Inmarsat telephone. This is understandable; there were only three crew members on board, and they could not maintain a continuous radio watch in the conditions they were experiencing and deal with their other duties. As an alternative means of communication, Universe Maritime sent messages to the Prestige by email at 2032 and 2048 asking the Master to telephone urgently. Telephone contact was established shortly after the second message, and the Master was then fully apprised of the engagement of Smit Salvage. A period of slightly less than three hours was required to identify and engage Salvors.

3.6.6.4 The MRCC in Madrid sent a facsimile message to Universe Maritime at around 2030 requesting them to advise the Master to accept a tow from Ria de Vigo. At this time it would appear that the MRCC were unaware of the salvage agreement concluded with Smit Salvage and they considered Ria de Vigo to be still under contract to SASEMAR. Similarly, SASEMAR were giving directions to the Prestige in accordance with Spanish legislation covering ships within their territorial waters and posing a threat to their coast however, the owners of Ria de Vigo must have been aware of Smit Salvage proposal to utilise their tug on a sub-contract basis.

3.6.6.5 Smit Salvage had been contracted to salvage the Prestige, and had obtained use of Ria de Vigo by arrangement with her owners, the involvement of the Spanish authorities in these negotiations is not known. According to the contract Smit Salvage was in control of Ria de Vigo and the towage operation from the time Ria de Vigo made fast to the Prestige. However, it appears from the evidence available that the Master of Ria de Vigo was receiving orders from the Spanish authorities on the 14 November, and that Smit Salvage had no part in the decision to tow the Prestige on a NW'ly course on that day. This is confirmed by the refusal of the MRCC to agree to the Master's request to stop going in a NW'ly direction and from information obtained during interviews given by senior members of the Spanish maritime administration, who confirmed that the initial priority was to move the Prestige away from the coastline as quickly as possible. From this, it can be concluded that the Spanish authorities continued to control and direct the operation despite the salvage agreement with Smit Salvage.

3.6.7 Offer and acceptance of towage

3.6.7.1 The only available evidence of communications between the tug and the Prestige is from the Master and Chief Officer of the Prestige. Their evidence is that there was communication between the ships, but Ria de Vigo made no offer of towage. The evidence of the Chief Officer is that Ria de Vigo was waiting for a salvage agreement to be signed before offering to tow the Prestige. This is consistent with the movements of Ria de Vigo indicated on the radar plot, but contrary to the evidence of the MRCC that they had ordered the Ria de Vigo to take the Prestige in tow shortly after the distress was called. If Ria de Vigo had been willing to offer towage at that time she would have been expected to remain in the immediate vicinity of the Prestige rather than 3 miles away. The radar plots also indicate that Ria de Vigo was about 3 miles distant and heading away from the Prestige at 1901. This is not consistent with any offer of towage being made at or before that time.

3.6.7.2 The VHF transcript indicates that the MRCC ordered the Master at 1817 on 13 November to accept a tow from the rescue ship stated to be about three miles away. The same call confirms that the Master was aware that the Prestige was drifting towards the coast and that his Managers were making arrangements for towage. The MRCC agreed that the Master could consult his owners and reminded the Master of his obligation to accept towage. It is clear that Ria de Vigo was the rescue ship referred to in this exchange and the Spanish authorities maintain that any delay in attempting to connect the tow line was due entirely to procrastination by the Master of the Prestige. However, from the evidence of the Master and Chief Officer of the Prestige it would seem that no offer of towage was made by Ria de Vigo at that time.

3.6.7.3 There is some degree of imprecision in the time at which Ria de Vigo first offered the Prestige towage. The Master and Chief Officer recall that it was around 2130 to 2200 on 13 November. They were however working in extremely difficult conditions and could not have been expected to keep a contemporaneous log of events. The VHF transcript shows that the Master of the Prestige called Finisterre Traffic on VHF at 2101 and advised that his owners had agreed to accept towage. The chronology provided by Smit Salvage records the first attempt to establish a connection with the Prestige was made at 2105. It is therefore accepted that the first attempt to establish towage was started sometime after 2100 and before 2200.

3.6.7.4 On the morning of the 14 November the managers of the Prestige received a facsimile message from Smit Salvage. This message indicated that Ria de Vigo was sent to the Prestige when the salvage contract was awarded. This is consistent with the above evidence that Ria de Vigo did not offer towage on first approaching the Prestige around 1830 on 13 November. It is possible that the owners or Master of Ria de Vigo were unwilling to offer assistance until a salvage contract had been signed. Alternatively, participation may have been delayed by negotiations between the owners of the tug, the Salvors and SASEMAR to release the ship to the Salvors on a sub contract basis. The initial offer of salvage services indicated that Ria de Vigo would be available on a sub-contract basis, while the ultimate arrangement appears to be that Remolcadores (owners of Ria de Vigo) were co-contractors in the salvage attempt.

3.6.8 Taking the tow

3.6.8.1 By 2200, the list was down to about 5^{o} to starboard, though the ship was still rolling heavily. The conditions at this time, whilst severe, would suggest that an attempt to deploy the emergency towing equipment on the stern could have been attempted; however, the Master felt this would be too dangerous and it was agreed to attempt to connect a tow from forward.

3.6.8.2 The Prestige was fitted with access to the bows as required by the SOLAS Convention. Using this route it took 20 minutes for the Master, Chief Engineer and Chief Officer to reach the forecastle. A section of the access structure had been damaged by the seas and was missing. It is questionable if they could have arrived at the forecastle in safety if they had started any earlier as the means of access was on the starboard side. Once there they made repeated efforts to establish a connection with Ria de Vigo. Communications with the tug were apparently hindered to some degree by language difficulties.

3.6.8.3 The Master of the Prestige realised from the outset that he had insufficient manpower to connect the towline forward. He requested assistance at 1817 and again at 2036 while in contact with the MRCC. Assistance was provided by transferring two personnel from the tug Ibaizabal Uno that was proceeding towards the Prestige from the direction of La Coruna. Ibaizabal Uno is owned by the Spanish government and was based at La Coruna, but was not contracted to Smit Salvage. The radar plots indicate that Ibaizabal Uno reached the Prestige by 0100 on 14 November.

3.6.8.4 There is some conflict as to the time at which the two extra personnel transferred on board. The evidence of the crew suggests they did not arrive until around 0600 on 14 November. The entries in the MRCC log suggest they arrived at 0221 and this is consistent with, but not substantiated by the contents of messages in the transcript of VHF calls. The information provided by Smit Salvage also suggests they arrived about the same time as suggested in the MRCC log entry. There is however general agreement that a further four personnel were landed on the Prestige around 0800 on 14 November.

3.6.8.5 It is inferred in the Spanish report to the European Commission, entries in the MRCC log and VHF transcript and during interviews with Spanish officials involved with the rescue operation, that the Prestige crew left the two Spanish personnel alone on the forecastle, and that a request by VHF was required to have them return to assist with further attempts to make a connection with the tug. It is not in dispute that the Master left the forecastle from time to time; he had ample justification in doing so. The Master was required to deal with communications with the MRCC, Ria de Vigo and the managers of the ship. He was also monitoring the drift of the Prestige towards the coast by means of GPS positions. All of these essential functions required his presence on the bridge and for these reasons it was necessary for him to leave the forecastle. He did so during intervals between successive attempts to connect with the tug, and was able to return as requested to assist in the operations on the forecastle.

3.6.8.6 The tugs Charuca Silviera and Sertosa 32 were successful in connecting lines to the Prestige at 0850 and 1000 respectively on 14 November. The line of the Charuca Silviera parted at 0945. Subsequently, Ria de Vigo was able to establish a

successful connection to the Prestige. The radar plots indicate that the Prestige was in latitude 43° 6.8'N longitude 9° 21.4'W, 4.3 miles from the coast, at 1200 when the Ria de Vigo towline was established. This is consistent with the evidence of the Master that the Prestige was 4.5 miles off the coast when the tow was connected.

3.6.9 Use of main engine

3.6.9.1 The MRCC first asked the Master if the main engine could be started during a VHF call at 0613 on 14 November. The sudden listing of the Prestige had resulted in the boiler and main engine stopping, although the main engine was restarted and ran for a short while before again stopping. During interview, the ship's engineering officers stated that subsequent movement of the ship caused a 400 kg spare cylinder cover to break loose and this damaged piping on one cylinder of the main engine. In addition, air locks had developed in fuel and lubricating oil pipes. There was only one engineer on board and the Master was therefore correct in telling the MRCC that additional crew would be required to start the main engine. The Master did not at this time express any opposition to starting the main engine and additional crew were returned to the ship at 1050 on 14 November.

3.6.9.2 When the Spanish surveyor boarded, he ordered the main engine to be started straight away. However, before it could be started, a second generator had to be started, this proved troublesome as air locks had developed in the fuel line, and according to the crew statements it was necessary to shift the cylinder cover and repair the main engine fuel pipes that it had damaged. The first attempts to restart the main engine were unsuccessful but at 1530, after seeking technical advice from the Managers' Emergency Response Team in Greece, the engine was started.

3.6.9.3 The Master expressed doubts about the wisdom of starting the engine as he thought that it may cause additional damage and the ship was already being towed successfully. However, the Spanish surveyor demanded the engine be started. He was adamant and would have ordered a higher speed but for the Master's intercession and warning of the danger of damage to the hull by running the engine through the critical speed. He accepted that the engine speed should be limited to 55 rpm, so avoiding this latter hazard. During a subsequent interview with members of the Bahamas' accident investigation team, the surveyor confirmed that his brief from the Spanish authorities was to assist the Master where possible but primarily to ensure the main engine of Prestige was restarted. The surveyor stated that he was not involved in the decision to move the vessel away from the coast nor was he required to consider alternatives, such as, stabilising the ship and taking her to a place of refuge on the coast.

3.6.9.4 During interview, which took place some 12 months after the incident, the Spanish surveyor made a number of observations and allegations concerning the condition of the ship and the motivation of the ship's staff during his time on board the vessel. He claimed that the engine room was in a very poor state of repair and that the main engine was restarted almost entirely due to his efforts to solve various problems with the fuel and lube oil systems for the generator and main engine systems and that the crew appeared to be intent on causing malicious damage to machinery in an effort to stop the engine from being re-started. His account of events that took place at this time is significantly at odds with the account given by the ship's engineers and ratings. His account of the state of the engine room differs markedly

from that given in the SIRE report some six months earlier (Appendix G). What motives the ship's staff might have had that would have led them to cause malicious damage to the engine at a time of extreme danger to themselves is hard to understand.

3.6.10 Direction of towage

3.6.10.1 When towage was first established, it was possible to make decisions about the destination of the ship. Such decisions would normally be based on a number of key factors such as: the condition of the ship, the availability of suitable places of refuge, the weather and, most importantly, what would happen if access to a place of refuge was refused. Unfortunately, it appears that the Spanish authorities did not take the opportunity to establish the exact condition of the ship once a tow had been connected and the immediate threat of a grounding on the coast removed. Thus they lost an opportunity to properly evaluate the risks involved in taking the vessel to a place of refuge.

3.6.10.2 The decision to tow the Prestige in a NW'ly direction when Ria de Vigo established connection around 1200 on Thursday 14 November had already been taken by the Spanish authorities. This is confirmed by the instruction given to the Master during the VHF call at 1803, by the Spanish surveyor when he boarded the Prestige on 14 November and by the undertaking which Smit Salvage was required to sign on 15 November.

3.6.10.3 The order to start the main engine resulted from a desire by the Spanish authorities to have the ship taken away from the Spanish coast as quickly as possible, on the assumption that this would lessen the risk of coastal pollution. In the absence of a quantified assessment of the structural condition of the Prestige, which they could and should have obtained, their options were limited. The Spanish authorities consulted with an expert from the University of La Coruna to establish whether a ship to ship transfer of the cargo would be possible. The expert concluded that cargo transfer was not possible in the ship's current location. During interview with Bahamas' investigators, the expert further stated he believed that the damaged condition of the ship, with its low freeboard would also have made a ship to ship transfer of cargo at a sheltered location impractical. The Spanish authorities also obtained information on the cargo of the Prestige which indicated a pour point for the oil of $+3^{o}C$. They therefore concluded that, in the worst case, much of the oil would solidify and pose minimal pollution if the vessel were to sink in deep water. Additionally, the weather conditions at the time meant that it would be difficult to bring the damaged ship into an established port such as La Coruna. The decision was therefore taken to move Prestige away from the coast as quickly as possible. Unfortunately, the pour point of the oil cargo was closer to $-3^{o}C$ and the assertion that a ship to ship transfer in a sheltered location was not possible is questionable, and is not supported by the views of Smit Salvage.

3.6.10.4 At the time that the tow to the NW was started, the Chief Officer had established that the extent of the overloading caused by correcting the list was an increase in bending moment on the hull of 21% above the normal seagoing permitted

value. The normally permitted limit does however have an inbuilt factor of safety. The corresponding increase in shear force was 5% above the maximum permitted value. These calculations were based on the intact condition of the hull and underestimate to some degree the overloaded condition. The list had been reduced to between 2 and 3 degrees and 2 Starboard after wing tank and 3 Starboard wing tank were open to the sea and flooded. There was no information available on the size or exact location of the breach in the hull, but the escape of cargo through the open Butterworth openings had stopped as the list was corrected. Photographs taken of the vessel at about this time indicate that there was some pollution leaking from the breach in the hull. Electrical power was available. The elimination of the list meant that the poop deck was accessible to the enlarged crew who could deploy the emergency towing equipment if required. Deployment was attempted unsuccessfully on the evening of 15 November and was not successfully connected until the morning of 16 November.

3.6.10.5 When the Master realised the Prestige was being towed back into the Bay of Biscay he contacted the MRCC by VHF to raise his concerns. A gale warning had been issued for Finisterre at 1200 UTC on 14 November. Weather in the Porto area to the south of Finisterre was more moderate, and in general the wave height was greater off shore than in the coastal areas. The Master's concern at heading NW was therefore well founded, for it was taking the Prestige towards more severe weather. The analysis of the meteorological data confirms that the sea state was always lower in the coastal areas than offshore. Towing to the NW meant that Prestige was subject to forces more likely to exacerbate damage to the hull than had she been held at a location further inshore. Notwithstanding the foregoing, senior members of the Spanish authorities confirmed during interview with the Bahamas' investigators that their priority at the time was to move the Prestige away from the coast as quickly as possible and that in their view, this was best achieved by making a NW'ly course. They further stated that on this course the damaged starboard hull had been afforded a degree of protection from the prevailing WNW'ly winds.

3.6.10.6 The weather analysis indicates that a swell of over 4 m in height from a WNW direction was experienced after towage began on 14 November. This meant that the ship was pitching as well as rolling. Similar weather and swell, continued throughout the night of 14 November and into the morning of 15 November. The decision to tow NW was therefore not justified on weather grounds. Early on 15 November the Salvors boarded and ordered the course change to S in an attempt to reach an area of better weather but this was too late to avoid the further damage which occurred when a section of side shell plating detached at around 0330 on 15 November. Paradoxically the subsequent SW'ly course exposed the damaged side to worsening weather which may have accelerated the further progressive loss of structure.

3.6.10.7 The speed between 1600 and 1800 on 14 November reached 6.3 knots due to the combined effects of the towage and the running of the main engine on the Prestige. The main engine was stopped at about 0330 on 15 November when a piece of the side shell became detached. When the Salvage Master boarded at about the same time he did not order the main engine to be restarted.

3.6.10.8 The track of the Prestige based on positions recorded in the MRCC log shows a slow and somewhat erratic trend after 0206 on 15 November. This indicates that

towage proceeded in a W'ly direction after 0206, before the engine on the Prestige was stopped and the section of shell plating breaking away from 3 Starboard wing tank. The entry in the MRCC log at 0400 indicates that the Master had instructed Ria de Vigo to change course to 180°, but, as this was after the Salvage Master had boarded it is likely that the Master was relaying the Salvage Master's instructions.

3.6.10.9 The Salvage Master would have preferred a long slow turn to starboard to lessen the exposure on the damage section of the hull, but this was not attempted as the damaged ragged steel on the bulwark of Ria de Vigo might have damaged the towline. The Salvage Master's preference to bring the ship on to a S'ly heading was to avoid pitching and avoid the bad weather forecast to the north. They also believed at this time that the ship could only be saved by bringing her to shelter on the Spanish coast and attempted to persuade the Spanish authorities to agree to this course on the morning of 16 November. The MRCC log shows that the Spanish authorities were made aware of this change of course. The response was that Ria de Vigo was instructed to keep the Prestige not less than 61 miles from the Spanish coast. It is understood that Ria de Vigo could not maintain a course of S, and SW was the nearest that was attainable.3.6.10.10 A significant deterioration of the hull condition was noticed by the Salvors when they returned to the ship on 16 November. This can be attributed to the period of severe weather encountered during the early hours of 16 November when the significant wave height increased to 6 to 7 metres aggravating the damage which had already occurred.

3.6.11 Delay to Salvors in boarding the Prestige

3.6.11.1 The first information on a possible salvage operation on the Prestige became available to Smit Salvage in Rotterdam on the evening of 13 November following an inquiry from the owners. Preparations to assemble a salvage team with suitable equipment began without delay. There were no commercial flights from Netherlands to La Coruna on the evening of 13 November, and the salvage team travelled on the first available flight on the following morning, arriving at La Coruna at 1415 on the same day. In view of the time required to assemble a salvage team with necessary equipment, it is unlikely they could have arrived in La Coruna any sooner, even if an aircraft had been chartered.

3.6.11.2 After the salvage agreement between Universe Maritime and Smit Salvage had been signed, Smit Salvage sent a facsimile letter to SASEMAR in Madrid. It is apparent from the opening sentence of this letter that some confusion had previously existed, possibly in respect of the employment of Ria de Vigo, which was at that time under charter to SASEMAR. This letter advised of the intention for the Tecnosub, a Spanish-based salvage company, salvage personnel to board the Prestige on the following morning. Tecnosub were engaged by Smit Salvage as co-contractors under the salvage agreement. The letter further advised that a second salvage team would arrive from The Netherlands in the afternoon to back up the first team. The Salvors' intention was for the second salvage team also to board the Prestige. Four Tecnosub personnel were transferred to the Prestige as anticipated at about 0800 on 14 November. It is understood that they were simply to assist those on board to manage the tow.

3.6.11.3 The person in charge of the operation for Smit Salvage was the Salvage Master. Within minutes of arrival at La Coruna he made a request to the MRCC for helicopter transport to the Prestige. This request was made by telephone, the response being that it should be submitted by facsimile.

3.6.11.4 The facsimile request for helicopter transport was made and is logged as being received 1603 in the MRCC log. It is not known if the facsimile was received in the MRCC some time before 1603. It would be uncharacteristic of the Salvors to take 1 hour and 40 minutes to transmit a facsimile in view of the urgency of the situation and the speed with which they acted in making the initial request by telephone. It was not until 1720 that the Salvage Master learned that helicopter transport was available.

3.6.11.5 The Salvage Master was asked by government official of his intentions regarding the salvage of the Prestige. The Salvage Master replied that he intended to board the ship to assess the casualty. This was what he would be expected to do in any salvage operation. The explanation of the Salvage Master appears to have been accepted initially, but within 10 minutes SASEMAR called back to inform him that he would have to sign an undertaking before being given clearance to board the Prestige. The condition of the undertaking was that he would remove the Prestige beyond 120 miles from the Spanish coast. As the only means of boarding the Prestige was by helicopter, which was under control of the Spanish authorities, the Salvors had no option but to accept this condition. Even if the Salvors had independent helicopter transport, they were subject to Spanish law, which gave SASEMAR the legal authority to direct the movement of the Prestige while within the Spanish EEZ.

3.6.11.6 The Salvage Master signed the required undertaking at the heliport in the presence of the La Coruna Harbour Master at 1900 on 14 November. It appears that the intention was to use the helicopter Helimer Galicia to transport the Smit salvage team for the MRCC log indicates that this helicopter was being refuelled at 1900 for that purpose. This helicopter had already been used to transport personnel to and from the Prestige. Permission to fly to the Prestige was given at 1940 but at the same time the salvage team were advised that the helicopter intended to transport them was unsuitable because it did not have auto-hover capability.

3.6.11.7 Permission was again given for the Salvage Master and his team to fly to the Prestige at 2130 on 14 November. Three minutes later the pilot of Helimer Galicia was advised that the planned flight was cancelled. The MRCC log states that the cancellation was ordered by “the competent authority”, but the identity of that authority is not known. As no information was given as to when the transfer to the Prestige might be authorised, the salvage team left the heliport and went to a hotel.

3.6.11.8 At 0030 on 15 November the Salvage Master was advised by his agent to proceed urgently to the airport for transfer to the Prestige. Entries in the MRCC log suggest that Helimer Cantabrico was mobilised by the MRCC at 0023 on 15 November and that it would be ready to leave from the airport at 0105. The salvage team boarded the helicopter at 0150 and arrived at the Prestige at 0250 and were landed on board the Prestige by about 0330 on 15 November.

3.6.11.9 If a helicopter had been available within, for example, one hour of the original request, the Salvage Master could have boarded the Prestige by 1700 on 14

November. This would have allowed him to inspect the ship in daylight from the helicopter and on board, thus providing the vitally important assessment of the condition of the Prestige as well as the appropriateness of towing the ship NW towards worsening weather. The Spanish authorities delayed the arrival of the Salvage Team on board the Prestige by over 8 hours. The reasons for the delay are not known. They were aware at 1803 on 14 November that the Master was concerned about being towed into the Bay of Biscay and that he wished to sail South and to a place of refuge. This conflicted with the views of the Spanish authorities. They had full legal power to give directions to the Master and the Salvors regarding the movement of the Prestige and also had the means of enforcement. They had the means to land enforcement officers on the Prestige and a Spanish warship was circling the Prestige at a distance of 3 miles. In these circumstances it must be questioned if the delay caused to the Salvage Master in boarding the Prestige was justified, noting the urgency of the situation and the need for rapid action if major pollution was to be avoided.

3.6.12 Assessment of the condition of the Prestige

3.6.12.1 When the Spanish surveyor boarded the Prestige on 14 November, with crew who returned to the ship to assist with the machinery, it provided the Spanish authorities an opportunity to make a first hand assessment of the condition of the ship. Had the surveyor made such an assessment, he could have reported that the situation had changed considerably since the emergency first arose on the previous afternoon. During interview with Bahamas' investigators, the Spanish surveyor stated that his instructions were to get the main engine started as quickly as possible and assist the Master. He stated that he was not instructed to perform a condition assessment of the vessel and was not involved in the decision to move the ship to the NW once the engine had been started. The absence of a thorough condition assessment at this time would seem to be a lost opportunity. The information either known or available on board the Prestige at that time was as follows:

- 3 Starboard wing tank and probably 2 Starboard after wing tank open to the sea and flooded
- Possible damage to one or more cargo tanks
- Extent of damage to shell unknown
- Deck visibly set down in way of 3 Starboard wing tank
- List reduced to about 2^{o} to starboard after flooding 2 and 3 Port wing tanks
- Ship stable and danger of capsize no longer present
- Electrical power available
- 8 crew on board, working to start main engine
- Hull Bending Moment 121%, Shear Force 105% of normal maximum allowable in seagoing condition
- Ship properly certificated and in class
- Ship under tow by two tugs
- Ship under control and no longer drifting to the coast.
- Weather forecasts available for Finisterre area

3.6.12.2 The salvage team did not land on the Prestige until around 0330 on 15 November and it was at about this time that a section of side shell plating detached in way of 3 Starboard wing tank. The assessment of the situation made by the Salvage Master after his inspection of the ship was as follows:

- 3 Starboard wing tank and 2 Starboard after wing tank flooded and open to the sea
- Several Butterworth covers missing
- 3 Starboard wing tank venting through Butterworth openings which had covers missing
- Possible damage to 4 Starboard wing cargo tank
- Possible damage to 3 Centre cargo tank leaking oil to sea through 3 Starboard wing tank
- Damage to starboard shell plating in way of 3 Starboard wing tank estimated to extend for 30 m and worsening
- Oil leaking because of rolling of ship

3.6.12.3 The Salvage Master further reported that he could not see the whole structure of the hull working, but the deck in way of the side damage was working and that the damage was progressive.

3.6.12.4 He formed the view that the only way to save the ship and cargo was to take the ship to sheltered waters on the Spanish coast for an urgent ship to ship transfer of cargo. By this time it should have been clear from the Salvage Master's assessment that the Prestige was unlikely to survive a long towage southwards and that the only chance of saving the ship and her cargo was to bring her to shelter as the Salvors requested.

3.6.12.5 When the salvage team returned to the Prestige on 17 November, after an overnight absence, the condition of the hull had deteriorated. There was a large oil spill around the ship indicating that some of the cargo tank boundaries had failed, most of the deck of 3 Starboard Wing Tank had disappeared and the derrick post was close to collapse. The Salvors had by this time accepted the directions given by the Spanish authorities and continued towing southwards. The possibility of reaching any place of refuge on the Spanish coast by this time had been very much reduced because of the deterioration in the condition of the hull, although the ship did survive for almost a further two days.

3.7 Places of Refuge

3.7.1 For the Prestige to have survived the damage incurred in the initial incident, the ship would have had to be taken to a sufficiently sheltered place to allow discharge of the cargo. This could have been somewhere relatively close to the Spanish or Portuguese coasts, or possibly, if the ship had been turned to a heading to protect the damaged section of the hull, a more remote destination where better weather prevailed.

3.7.2 Following the refusal of the Spanish authorities to allow the ship into a place of refuge on the Spanish coast and the refusal of Portugal to allow the ship to enter its EEZ, the Salvors did try the further option of taking the ship to a place where the weather conditions would allow a transfer of cargo. This was estimated to be south of the Cape Verde Islands, some 2000 miles away.

3.7.3 Comparison between towage to sea and seeking a place of refuge

3.7.3.1 There can be no doubt that the Spanish authorities were faced with a difficult and potentially dangerous situation when the emergency arose. The immediate threat was dealt with by 14 November when the Prestige was taken in tow in moderating weather conditions. The Spanish authorities were under a duty to minimise the effects of the casualty on the coast of Spain and had the legal powers to control the movements of the Prestige. Rather than bringing the ship to shelter, the decision was taken to tow the Prestige away from the Spanish coast. This decision was taken without waiting to hear the opinion of the Salvage Master, or making any other thorough assessment of the condition of the ship, but was apparently based on advice that indicated ship to ship to ship transfer operations could not be achieved and that the pour point of the ship's cargo would preclude significant pollution if Prestige sank in deep water.

3.7.3.2 The oil that escaped during towage was released at various points along the track of the ship and was therefore spread over a much larger area than would have occurred if the same amount of oil had escaped at one position. This is of particular significance along the Galician coast where there are numerous inlets, so that a long length of shoreline was affected by oil slicks drifting ashore.

3.7.3.3 The properties of the cargo are also relevant. The fuel oil on board was M100 grade, which has a very high specific gravity (greater than 0.95) and is highly persistent oil with little volatile material and a very low viscosity. When this grade of oil escapes into the sea and is washed ashore the only way to clean it up is to physically remove it. It will not quickly disperse naturally or with the use of chemical dispersants. Consequently any spillage is more readily dealt with if it is concentrated in one place rather than spread out over a long length of highly indented coast. While the consequences of a massive spill within a sheltered inlet would be severe, the spill would be highly localised.

3.7.3.4 In the report of the Director General of Merchant Shipping of Spain to the European Commission, it is stated that the Chief Pilot of La Coruna was consulted on the viability of bringing the Prestige into the port of La Coruna. While the Chief Pilot pointed out that ships with the draught of the Prestige were prohibited from entry, and that ships without engines and steering were also prohibited from entry, he stated that he would be prepared to attempt entry if absolved of responsibility for any mishap. The Chief Pilot also stated that anchorage in the Ares estuary would be possible but that it was unsafe due to exposure to the weather.

3.7.3.5 When the Prestige was towed towards Portuguese waters, the Portuguese authorities told the Salvors that entry to their waters would not be permitted. This meant that the ship had to be taken further out to sea to avoid crossing the Portuguese EEZ. This decision probably did not affect the final outcome as by this time the damage to the ship was such that it was unlikely to have survived the length of tow necessary to reach calmer waters.

3.8 Treatment of the Master of the Prestige

3.8.1 The Master of the Prestige was arrested when he came ashore. He had been on the bridge since before the initial incident and worked throughout the night of 13 November in extremely arduous conditions making repeated attempts to connect to the tug. He was also obliged to handle VHF and radio telephone communications and monitor the position and condition of the ship. As Master he was also required to respond to the Spanish surveyor and Salvors when they boarded. When he was evacuated ashore on the evening of 15 November, he had been on continuous duty for over 51 hours in very difficult conditions, without proper rest, food or normal facilities. In these circumstances he had the right to expect some rest and recuperation before being interviewed. Instead he was required to undergo questioning by the Spanish authorities until 0200 the next day. Only then was he allowed to wash, change clothes and rest.

3.8.2 In his statement, the Salvage Master said that when he boarded, at about 0330 on the morning of 15 November, he 'was very worried about the condition of the crew. They were very passive and tired and they told me that they had not even taken proper meals for some time.' This was almost 24 hours before the end of the questioning which they underwent after being taken ashore.

3.8.3 On the day after his interview, the Master was transferred to a high security prison. He appeared in Court on the morning of 16 November where a Court Order was issued stating that he was to be detained in prison. A 'Denuncia' had been issued against him by the Harbour Master of La Coruna on 14 November. A further Court hearing was held on 17 November and again he was remanded in prison, bail level was set at three million Euros with attendance required at court every week. (Copies at Appendix L) The level of bail set could not be obtained and the Master remained in prison. The Bahamas' investigating officers were not granted access until some considerable time later and, even then, under conditions totally inappropriate for the conduct of an accident inquiry interview.

3.8.4 The Spanish authorities considered that the Master had disobeyed their orders in respect of acceptance of towage from Ria de Vigo. This is stated in the Spanish report to the European Commission, in the Court Order of 17 November and in the 'Denuncia' of the Harbour Master of La Coruna. It is clear from the earlier analysis that this was not the case.

3.8.5 Regard must be had to the time at which a tow was first offered. As already described, Ria de Vigo did not offer towage until after 2130 on 13 November and was apparently waiting for a towage contract to be signed. It was readily accepted and the failure to connect immediately was due to the difficult conditions experienced and lack of steam power, and manpower, on the Prestige.

3.8.6 The Spanish authorities also stated in the report to the European Commission that the Master of the Prestige obstructed the Spanish surveyor regarding the starting of the main engine on 14 November. This is not supported by the evidence available. It is true that the Master opposed the use of the main engine on the grounds that further damage to the hull would result. Nevertheless, he instructed his crew to prepare the engine for starting and when ready to start it.

3.8.7 After his appearance before a judge in La Coruna, the Master was told that he could be set free on bail of 3 million euros, although the prosecution had asked for a bail of 10 million Euros to be set. The bail money was not available; he therefore remained in custody in a high security prison, until 7 February 2003 when bail of 3 million euros was paid. He was required as a condition of bail to remain in Spain, unable to return either to his home in Greece or to travel to Brussels to attend the European Commission investigation into the casualty. In addition he was required to report to the police every day.

3.8.8 Spain, as a coastal state has the right under Article 73 of the United Nations Convention on the Law of the Sea (UNCLOS) to arrest any ship or crew for any failure to comply with any laws made under the Convention to conserve the seas within her exclusive economic zone. Article 73 further provides that arrested ships or crew must be released on posting of reasonable bond or other security. In the case of the Prestige, the initial arrest of the Master might be justified pending investigation. The detention beyond the initial court hearing on 17 November 2002 appears to be in contravention of Article 73 of UNCLOS on the grounds that the size of bail set was unreasonable. The Master was told by the Spanish authorities after the hearing on 17 November 2002 that criminal proceedings would be taken against him. At the time of writing this report, the Master remains in Spain subject to the conditions of his bail.

3.8.9 What has not been made clear is exactly what orders the Master disobeyed, who issued them and with what authority. Under the provisions of the ISM Code, which are mandatory under SOLAS, the Master "has the overriding authority and the responsibility to make decisions with respect to safety and pollution prevention…" Any steps to remove or alter that authority should be clearly explained and justified to the Master.

3.8.10 The Master has also been accused of causing pollution. This is difficult to understand. He had taken all proper seamanlike precautions when handling his ship in the severe weather conditions before the initial incident. He remained on board when his crew were evacuated to try to save his ship and minimise pollution. It would be unreasonable to blame him for either the initial damage or for the internal condition of his ship.

4. CONCLUSIONS

4.1 General comments

4.1.1 There was no loss of life or injury in this incident, but serious pollution of the Spanish and French coasts resulted from it.

4.1.2 There is a lack of firm evidence to assist in finally deciding the cause of the initial failure of the hull. Nevertheless it has been possible to conclude on the location of the initial damage and to identify a number of possible causes that may have contributed to the failure.

4.2 Sequence of initial events

4.2.1 The initial sequence of events can be set down with a high degree of probability.

4.2.2 There is evidence that the ship was in heavy weather and encountered a large wave, which struck the ship's starboard side. This was observed to have resulted in damage to the starboard hose rail and the starboard manifold drip tray. A loud bang was heard by the ship's staff when the wave struck and the vessel began to list to starboard.

4.3 Location of the initial damage

4.3.1 Investigation has concluded that there was a leakage into 3 Starboard wing tank and 2 Starboard after wing tank, which were both originally empty, causing the starboard list. There is additional evidence that the side shell plating above the waterline in way of 3 Starboard wing tank was deformed and that the deck was set down, this being consistent with the observed damage to the starboard side hose rail and the drip tray.

4.4 Development of damage to 3 Starboard wing tank

4.4.1 Following the initial damage to 3 Starboard wing tank there was a progressive increase in the extent of the destruction of the tank’s structure. It can be seen from video records taken during the towage of the ship that waves continually pounded into the tank for prolonged periods. It is also evident that roll and pitch motions caused water to rapidly flow in and out of the tank which resulted in unusually high fluctuating pressure loading. Tank structures are not designed to withstand such forces and even a new ship, if it had damage to its side shell, perhaps due to collision, could suffer similar progressive loss of material and strength if the event occurred in heavy weather.

4.5 Possible sources of potential weakness in 3 Starboard wing tank

4.5.1 There is insufficient evidence to conclude with any degree of certainty on the cause of the initial failure of the hull. Nevertheless, it has been concluded that there was a weakness in the structure of 3 Starboard wing tank, which in combination with

the forces exerted to the structure in the prevailing conditions gave rise to a breach in the side of that tank. A number of different potential causes of weakness have been investigated. Those that have been concluded as unlikely to be causes of the initial failure are:

- Explosion
- Collision with a floating object.
- Overloading during cargo operations.
- Bottom damage due to earlier grounding.

4.5.2 It has been concluded that the following causes of weakness cannot be ruled out on the available evidence as having contributed individually or in combination to the initial failure of 3 Starboard wing tank:

- Contact damage associated with earlier Ship-to-Ship transfer of cargo
- Fatigue
- Failure of the transverse bulkhead between 3 Starboard wing tank and 2 Starboard after wing tank.
- New for old steel replacement.
- Corrosion

4.6 Surveys and inspections of the ship

4.6.1 The ABS had classed the ship from new and the surveys were carried out by surveyors exclusive to that society.

4.6.2 The 5th. Special Survey, carried out in China in 2001, eighteen months before the incident, appears to have been carried out to the highest current industry standards. An inspection of the survey records, an audit of the Classification Society and an inspection of the ship yard have revealed no significant problems. All of these checks were carried out by IACS auditors and witnessed by representatives of IMO, the European Commission, and INTERTANKO, as well as investigators from the Bahamas Maritime Authority.

4.6.3 No record is required to be kept of the thicknesses of steel removed during a survey. This means that the ability to assess rates of corrosion is hampered. It is understood that there is no requirement for this information to be kept in the rules of any of the classification societies.

4.6.4 No record is required to be kept of the strength calculations carried out during a survey. This means that comparisons between the strength of the ship at successive surveys cannot be made. It is understood that there is no requirement for this information to be kept in the rules of any of the classification societies. As noted in 3.4.6.2 a requirement to evaluate longitudinal strength did not come into effect until 1 July 2002.

4.6.5 The Annual Survey, carried out in Dubai in 2002, six months before the incident, has been similarly checked. An internal inspection of 2 Starboard after wing tank should have been carried out because it was classed as a ballast tank and was adjacent to cargo tanks fitted with a means of heating. This was not done because the

surveyor was not aware that a means of heating was fitted in the adjacent tanks. However, the tank in which the incident originated, 3 Starboard wing tank, was classed as a cargo tank for survey purposes and therefore was not due for inspection. The structure of 2 Starboard after wing tank appears to have survived all of the additional stresses which the incident imposed upon it except for the bulkhead between the two tanks. It is, therefore, probable that an inspection in Dubai would not have revealed any significant problems.

4.6.6 Inspecting the inside of any tank is not something that can be undertaken without proper preparation. On a tanker, any cargo or ballast tank that needs to be entered must be certified as gas free and the oxygen content must be satisfactory before entry is made. It follows from this that no inspector carrying out a random or unannounced inspection will enter a tank except in very exceptional circumstances when preparations have been carried out and valid certification on the gas and oxygen content is available. The Port State Control, SIRE and other inspections carried out before the incident gave no cause for concern about the general condition of the ship and no reason to believe that special internal inspection of any tank was necessary. Even if inspectors had entered the tanks they would probably have been unable to make close-up inspections of the majority of the structure. This latter limitation also applied to the inspection carried out by the Master and Chief Officer before the ship sailed from St Petersburg.

4.6.7 Given the above conclusions, there is a need to consider carefully current repair and survey practices to try to identify ways in which presently hidden sources of weakness can be revealed. Areas which have come to light in this investigation include: considering the effects of joining new steel to old, especially in older ships; means of detecting fatigue; examining residual stresses in areas in which large repairs have been carried out; the amount of non-destructive testing carried out on welds during large repair operations; determining the corrosion rates in older steel, especially in areas in which high condensation may be present.

4.7 Management of the Prestige

4.7.1 From the beginning of the incident there was no doubt as to the ownership and management of the ship. The managers were in contact with the Spanish authorities throughout and supplied all information requested.

4.7.2 The managers took their responsibilities very seriously and when informed of the incident they implemented their Emergency Response Plan, put in place their emergency response team and gave guidance to the crew when starting the main engine. They appointed an agent in Spain to look after their interests and liaise with the Spanish authorities.

4.7.3 The managers rapidly organised Salvors, engaging one of the world’s foremost salvage companies.

4.7.4 The ISM audit of the company subsequent to the incident showed no major non-conformities, the audit team was accompanied by a representative of the Bahamas Maritime Authority. The subsequent inspection by Bahamas Maritime Authority officials found the company to be well run with well organised emergency procedures.

4.8 Immediate response to casualty

4.8.1 The immediate response on board the Prestige to the initial incident was to sound the General Alarm to alert the crew and to transmit a distress signal. Both of these were the correct and appropriate actions to take.

4.8.2 After confirming that the distress call was genuine, the response of the Spanish shore authorities on receipt of the distress message was to react rapidly and send helicopters to lift off the crew. They also alerted all ships in the area and the Walili confirmed that she was about three miles astern of the Prestige and would proceed towards her. Shortly after the distress signal was received, the tug Ria de Vigo, which was about 23 miles from the Prestige, was instructed to proceed to the assistance of the Prestige. These were the correct and proper actions and the speed with which they were carried out is to be commended.

4.8.3 Although all of the crew could have been evacuated at an early stage, the Master, Chief Engineer and Chief Officer volunteered to stay on board to try to save the ship and prevent serious pollution. The ship had a large list and was rolling in heavy seas, with an undetermined amount of damage, so the decision to stay with the ship would not have been taken lightly.

4.8.4 Before the evacuation of the crew, the Master ordered that 3 Port wing tank and 2 Port after wing tank should be filled. Although this placed additional stresses on the ship by putting additional weight amidships, the action was the correct one and enabled the subsequent connection of the tow and the later salvage attempts to be carried out. This decision was endorsed by the Salvage Master. The survival of the ship for a further six days, despite adverse conditions and considerable additional damage, demonstrated that the ship was sufficiently strong to take this added loading.

4.9 Events between the rescue of the crew and the boarding of the salvage team

4.9.1 The messages from the shore authorities to the Master of the Prestige appear to assume that whoever sent a message had authority to give orders to the Master. Spanish law does allow such orders to be given. However, it is not clear from those messages which authority was issuing orders, which authority was in charge of the operation or which was coordinating it. It is also not clear at what stage the shore authorities decided that they should issue orders to the Master.

4.9.2 At no time was the position explained to the Master and at no time did any shore authority take command of the ship from the Master. It would seem that each shore authority which contacted the ship simply assumed that the Master should obey every order. According to SOLAS Chapter 9, and the ISM Code, the Master has the overriding authority and responsibility to make decisions in respect to safety and

pollution prevention. If any shore authority wishes to take this responsibility away from the Master, it is most important that that authority explains clearly to the Master who is issuing orders and the extent to which the Master still has control of his ship.

4.9.3 Despite the above, the Master made every effort to comply with the instructions given from ashore. When ordered to take a tow, he asked the shore authorities if he could contact his owner first and, at the same time, asked for additional assistance on board to secure the tow as there were insufficient personnel on board and there was no power to the winches. The request to contact the owners was agreed by the shore authorities. No confirmation was given that additional help would be provided to assist in making the tow fast.

4.9.4 Those on the bridge of the Prestige stated that the tug would not agree to take a tow until a salvage agreement had been signed. This was contrary to the orders apparently given to it by the shore authorities.

4.9.5 There was some delay in contacting the Master after the salvage agreement was reached as the Master was on deck rather than on the bridge. This was due to the need to carry out other duties on board apart from keeping a radio watch.

4.9.6 When the Master returned to the bridge he confirmed that he would make the tow fast but again stated that additional help would be required. Despite the lack of the requested extra personnel, the Master, Chief Engineer and Chief Officer made their way forward to attempt to make the Ria de Vigo fast. Seven unsuccessful attempts were made to make the tug fast between 2130 and 0600.

4.9.7 Had additional personnel been supplied to the ship when requested it is possible that tug could have been secured earlier.

4.9.8 Earlier use of the after towing equipment may have resulted in the ship's drift towards the shore being halted earlier and the Master's decision not to try to use it may be questioned. However, later attempts at connection were not initially successful and may not have been had the Master decided to attempt to deploy the gear at an early stage.

4.9.9 When the Spanish surveyor, who boarded on 14 November, ordered that the main engine be started, he did so without making any assessment of the condition of the ship. His instructions were issued without any indication being given to the Master as to the authority or the qualifications of the surveyor to take such a critical decision.

4.9.10 The Master pointed out the danger of causing further damage to the ship if the engine was started, due to the vibrations which would be induced into the hull, but the surveyor insisted and the Master gave the Chief Engineer the order to start the main engine.

4.9.11 When the main engine was repaired and starting arrangements completed, the Spanish authorities ordered that the ship head in a NW'ly direction. When the salvage team arrived the main engine was stopped and the ship brought onto a more S'ly heading.

4.9.12 Had the surveyor made a proper assessment of the situation on board, he could have given the shore authorities a more complete picture on which to base their subsequent decisions.

4.10 The Salvage Team

4.10.1 When the main salvage team arrived in La Coruna, some twenty-four hours after the initial incident, some escape of oil had occurred possibly from breached cargo tanks, but there was little apparent damage to the ship additional to that which had occurred originally. It was therefore essential that the team be taken to the ship as soon as possible to assess the situation and make recommendations about action to be taken.

4.10.2 The prolonged delay in allowing the salvage team to go to the ship meant that they boarded in darkness and were therefore restricted in the assessment of the condition of the ship which they could make at that time.

4.10.3 On boarding the ship, the Salvage Master ensured that the main engine was stopped and requested that the shore authorities allow the ship to be taken to a place of refuge. The request was refused and the salvage master was ordered to ensure the ship was taken 120 miles offshore in accordance with the undertaking already signed.

4.10.4 The salvage team were the first people to board the ship who were trained, qualified and experienced sufficiently to make a proper judgement about the condition of the damaged ship. Their views should have had some influence on the way the ship was subsequently handled.

4.11 Place of Refuge

4.11.1 Requests to allow the Prestige to move to a place of refuge were first made by the Master and then by the Salvage Master. When the Master asked to be taken to a place of refuge, the ship was close to the coast, there was only a limited breach in any of the cargo tanks, the leakage from the Butterworth openings had ceased, the ship was only listing about 5^{o} and was under tow, and the main engine would have been available for manoeuvring.

4.11.2 By the time the Salvage Master made his request, the ship was further offshore; it had been subject to another prolonged spell of heavy weather and suffered further damage. However, the ship was upright, under tow and capable of being taken to a suitable sheltered place.

4.11.3 The analysis of the wave conditions during the period shows that the weather inshore was less severe and would have caused a lesser degree of stress on the ship than the offshore situation into which it was sent.

4.11.4 Despite being sent away from the coast into more severe conditions and being pushed at up to 6.5 knots into a head sea using the main engines for several hours, the ship survived for six days before finally breaking in two. It is certain that the ship could have survived being taken to a place of refuge. Once at such a position, a proper assessment could have been made of the condition of the ship and the best way to ensure that any risk of further pollution was minimised.

4.11.5 The provision of a place of refuge could well have resulted in a much more favourable outcome and prevented the subsequent large scale pollution of a long stretch of coastline.

4.12 Treatment of the Master

4.12.1 The Master was eventually brought ashore, together with the Chief Engineer and Chief Officer, at about 1800 on 15 November when the Salvage Master decided that it was unsafe to remain on board overnight. At that time all three had been on continuous duty for 51 hours since the initial incident and the Master had been on the bridge before the incident. During that time the three had spent long hours, in atrocious conditions, trying to make fast a tug and subsequently helping the salvage team. None of the three had had any sleep, properly prepared food, or a proper change of clothing.

4.12.2 They had spent the time trying their best to help save their ship and cooperating with the shore authorities, despite believing that many of the decisions being taken by the shore authorities were wrong. The Master had asked for the ship to be taken to a place of refuge, a request later repeated by the salvage team. He had asked for the main engine not to be started because of the additional damage it may cause, a request later confirmed as correct in the judgement of the Salvage Master. He asked for extra personnel to be put on board to help secure the tug during the afternoon of 13 November, they did not arrive until the following morning by which time the three officers had spent the entire night unsuccessfully struggling to secure a tug. He had asked for the vessel not to be taken to the NW.

4.12.3 It was claimed by the Spanish authorities before a judge investigating the incident that the Master had disobeyed orders from the shore authorities and had caused serious pollution. During the initial interview, the Master stated he did not disobey any order from ashore. He had done this despite the fact that at no time did anyone from ashore explain to the Master the legal position in Spanish waters. It was not explained to the Master, or to the Bahamas' investigators, which orders had been disobeyed, who had given them or with what authority, or to what extent the Master was still expected to exercise his judgement in running his ship.

4.12.4 No evidence has been discovered during this investigation to substantiate the charge of disobeying an order from any shore authority.

4.12.5 Looking at the charge of causing pollution, it is difficult to blame the Master for the initial damage to his ship. The Master would have had no way of anticipating or acting to prevent the event. He had acted in a proper seamanlike manner during the severe weather prior to the incident, slowing to an appropriate speed. After the

incident he took all proper steps to alert the shore emergency services, to evacuate his crew and to decrease the list of the ship. He then chose to stay on board to try to save his ship and try to minimise pollution when he would have been perfectly entitled to have abandoned his ship together with the rest of his crew. His actions subsequent to the remainder of the crew leaving were exemplary.

4.12.6 The Master was kept in custody for 83 days and only released when a bail of 3 million euros was lodged. He is still, at the time of writing this report, unable to leave Spain and must report regularly to the Spanish police. Such action by the Spanish has been widely condemned and is considered to be a violation of the Master's human rights.

5. RECOMMENDATIONS

5.1 General comment

5.1.1 After an incident such as the one which happened to the Prestige, it is most important to look for lessons which can be learnt. The investigation has been as thorough as possible in the circumstances and a number of points have emerged which should be followed through to try to improve safety at sea and pollution prevention in the future. The recommendations which follow are addressed to the shipping community as a whole, but certain points will be of special interest to particular sections of the maritime community. In the latter cases those sections are identified.

5.2 IMO, governments and classification societies

5.2.1 The trigger for the initial structural failure was the ship being struck by a large wave which revealed that there was a source, or sources, of weakness in the structure of 3 Starboard wing tank. It appears that these were not such as to be readily detectable or predictable using present industry survey, inspection and repair practices. It is important that those practices be re-examined to see where improvements can be made. In particular the following points are seen as worth further examination:

- Consequences on structural reliability of new steel to old, especially when large repairs are carried out on older ships.

- Means of minimising the influence of residual stresses in areas where large repairs are carried out.

- Means of detecting fatigue cracks and recording presence of fatigue cracks prior to repairs or renewals.

- Means of predicting and monitoring rates of corrosion particularly in spaces adjacent to heated cargo tanks.

- The importance of close-up inspections during surveys and inspections by crew has to be emphasised.

- The requirement for the annual close up examination of a tank that is able to carry ballast water where the tank is uncoated or where the tank coating is in poor condition.

- The effect of contact damage on the strength of a ship side structure and guidance on identifying and reporting such damage.

- The use of non-destructive testing of welds on ship side steelwork in ship repairs.

- The retention of records of all calculations made to determine strength during a survey.

- The retention of records of condition of structure including thickness gaugings both prior to renewals and following renewals. This will provide for a more complete historic record of corrosion rates in spaces.

5.2.2 As a consequence of the initial failure of the side structure of 3 starboard wing tank there was an initial list to starboard with loss of oil through openings in the main deck and a subsequent progression in the extent of damage culminating in a total loss. This leads to the necessity for evaluation of:

- The adequacy of current requirements relating to the strength of securing arrangements for openings in the main deck of tankers.

- The adequacy of current requirements relating to the design strength of double hull tankers with respect to their survivability, particularly in adverse weather, following accidental damage of the outer skin.

5.3 IMO and Governments

5.3.1 There is a vital need for clarity about who is in control during an emergency. If a coastal state is to assume a degree of control over a ship in an emergency, using powers under its national laws, the Master, the owners and any salvage teams must be told what the control structure is, who is authorised to issue orders, and what degree of control remains with the other parties. This is especially important for the Master as he is given 'overriding authority and the responsibility to make decisions with respect to safety and pollution prevention' by the ISM Code which is mandatory under the SOLAS Convention. It is, of course, essential that any person taking any degree of control of a ship must be properly trained and be competent to carry out that task.

5.3.2 Any decision by a coastal state to reduce the Master's responsibility must be made clear to him and the degree of control left to his discretion spelled out to him. The power under which such a change of responsibility is taken should be stated to the Master before any orders are issued.

5.3.3 The issue of Places of Refuge is a matter of international discussion at the present time. In considering such matters, the importance of the following has been highlighted by the incident to the Prestige:

- The effect of not granting a ship entry to a place of refuge:
    - on the rest of the coastline and amenities in the surrounding area.
    - on other countries.
    - on the ship.

A ship should not be refused entry to a place of refuge without careful consideration being given to what alternatives are available and what will be the consequences of the ship adopting those alternatives.

5.3.4 The detention of the Master in a case such as the Prestige will have an effect on the morale of the industry and possibly affect future recruitment if it is considered that the detention is unreasonable, excessively long or the conditions for release thought to be disproportionate. Governments should take these effects into consideration when contemplating action against the Master of a ship involved in an incident.

APPENDIX A

Description of ship

- Ownership and flag
- Principal particulars
- Propulsion and auxiliary machinery
- Radio Equipment
- Navigation equipment
- Statutory certification
- COW/CBT operation
- Stability and loading information
- Access to bows

Ownership and Flag

Name	Prestige (from1988)
Builder	Hitachi Zosen-Sakurajima Shipyard, Osaka, Japan
Year of build	1976
Original name	Gladys (until 1988)
Original owner	Monarch Tankers (until 1988)
Original manager	Maritime Overseas Corporation, New York (until 1988)
Original flag	Panama (until 1988)
2nd owner	Lancer Corporation
2nd Manager	Universe Maritime Inc
2nd Flag	Liberia (briefly)
3rd Flag	Greece (until 1994)
Final Owner	Mare Shipping Incorporated Athens (from 1994) (initially managed by Laurel Sea Transport)
Final Manager	Universe Maritime, Athens
Final flag	Bahamas (from 1994)

The vessel was one of four sister ships built at the same shipyard. None of the other three ships were in service at the time of the casualty.

Principal Particulars

Official Number:	72534
Port of Registry:	Nassau
IMO Number:	7372141
Call sign:	C6MN6
MMSI Number:	308957000
Gross Tonnage:	42,820
Net Tonnage:	29,964
Deadweight:	81,564 tonnes
Length overall:	243.49 m
Length BP:	232.01 m
Breadth Moulded:	34.41 m
Depth:	18.70 m
Summer load draft:	14.027 m
Class	American Bureau of Shipping, Maltese A1, Circle E, Oil Carrier, Maltese AMS, Maltese ACCU

Propulsion and auxiliary machinery

Propulsion	Burmeister and Wain Type 8K84EF, 8 cylinder diesel, 14,711 KW
Fuel	Heavy oil at sea, diesel oil manoeuvring
Service speed	15 knots (As built)
Service speed	12 knots (for final charter)
Fuel consumption	54 tonnes (at 12 knots)
Electrical power	1 x 900 KW alternator
	2 x 480 KW alternators
Boiler	2 x Auxiliary water tube boilers
	1 x Waste heat water tube boiler

All cargo tanks were protected by an inert gas system

Radio equipment

The vessel was equipped with a full GMDSS outfit and certified to operate in A1, A2 and A3 areas. Radio equipment was fitted on the navigating bridge, and consisted of the following:

- VHF transceivers: Type JRC/JHS-32A
- MF/HF DSC watch controller/receiver: Type JRC/JSS-800
- Radio telephone distress frequency watch receiver: Type Skanti/WR6000
- INMARSAT C Ship Earth Station: Type Philips SAFECOM with enhanced group call
- Navtex receiver: Type Lo-Kata/Navtes 2
- 406 MHz float free EPIRB: Type Lo-Kata 406
- VHF survival craft radiotelephone: Type ACR 16/1 Survival Radio
- Radar transponders: Type Raytheon Rescuer II

Navigation equipment

- Radar 1 x Racal Decca Bridgemaster
  1 x Raytheon M34 ARPA
  1x Furuno GP 32

- GPS 1 x Garmin GPS 128

The vessel was also fitted with magnetic and gyro compasses, an echo sounder, and a speed log.

Statutory certification

1. The certificates for the vessel listed below were in force at the time of loss:

Table 1

Certificate	Issue Date	Expiry Date
International Loadline Certificate	16. 08.01	31.03.06
International Safety Construction Certificate	16.08.01	31.03.06
International Safety Equipment Certificate	23.01.01	31.03.06
International Safety Radio Certificate	07.06.01	31.03.06
International Oil Pollution Prevention Certificate	16.08.01	31.03.06
Safety Management Certificate	19.07.01	20.06.06

2. The above certificates, with the exception of the Safety Management Certificate, were issued by the American Bureau of Shipping under the delegated authority of the Commonwealth of The Bahamas. The Safety Management Certificate was issued by Bureau Veritas also under delegated authority of The Commonwealth of The Bahamas.

3. The vessel was subject to, and had been surveyed in accordance with, the Enhanced Survey Procedures that entered into force on 1 January 1996 under SOLAS Regulation XI/2 and MARPOL Regulation I/13G.

COW/CBT operation

1. The vessel was approved for operation as an oil tanker in the Crude Oil Washing and Clean Ballast Tank modes. The Hydrostatic Balance Loading Operations Manual was approved by the American Bureau of Shipping on 7 March 2001 for use in hydrostatic balance loading in accordance with MARPOL Regulation 13G(7) and Appendix 7 of Annex 1.

2. The vessel also complied with MARPOL Regulation 13G(4) and was permitted to operate in the Clean Ballast Tank mode without being required to conform to the Hydrostatic Balance Loading procedures. The alternative modes of operation (COW

with Hydrostatic Ballast Loading and Clean Ballast Tanks) were each authorised in separate appendices to the IOPP Certificate. The Hydrostatic Balance Loading Manual was approved by ABS on 29 May 2002.

3. When operating under Crude Oil Washing (COW) mode, with Hydrostatic Balance Loading, cargo oil could be carried in 3 wing tanks P & S under Regulation 13G (7) of MARPOL Annex 1. 3 wing tanks P & S were however designated as clean ballast tanks while operating in the CBT (Clean Ballast Tank) mode in accordance with Regulation 13G(4) of MARPOL Annex 1. These tanks could not be used for the carriage of oil cargo in the CBT mode of operation, and were limited to the carriage of clean ballast. 3 wing tanks P & S were designated as cargo tanks in the ABS survey records and various other documents relating to the vessel.

Stability and loading information

1. The stability information provided on the vessel was approved by the American Bureau of Shipping as meeting the requirements of SOLAS Regulation 2-B 1.25.8. The vessel was not required to carry a loading instrument, but the owners had provided a computer software programme to be used for loading calculations. This was approved by the American Bureau of Shipping on 21 June 1999 subject to a test case being run in the presence of a surveyor. A satisfactory test was carried by an ABS surveyor during the special survey in 2001 and recorded in the survey form.

Access to bows

1. The vessel complied with the provisions of SOLAS Chapter II-1 Regulation 3-3. A walkway was constructed immediately to starboard of the deck pipelines extending from the accommodation to the forecastle. The walkway consisted of steel rails and stanchions, with openings in the rails giving access to the deck at intervals. The walking platform of the access consisted of steel plates.

2. The walkway was fitted clear of the inert gas and crude oil washing pipelines crossing the deck, and at a higher level in way of the cargo manifolds amidships. The walkway was certified by the American Bureau of Shipping on 19 May 2001 as meeting the requirements of the SOLAS Convention.

3. The walkway started at the door on the starboard side of the accommodation, where it was 3.4 m inboard from the ship's side. It extended forward and around deck fittings where required. In the vicinity of the manifold amidships, it was 7.3 m from the ship's side. Over the greater length of the access the deck plates were close to the deck, and only where required to pass over main pipelines was the height raised to about 1 metre above deck.

APPENDIX B

Crew

- Manning, certification and training
- Safe Manning Certificate

Manning, Certification and Training

1. A Minimum Safe Manning Certificate was issued by the Bahamas Maritime Authority on 9 December 1998. While operated by Universe Maritime Limited the vessel carried a crew of 27 persons comprising the personnel designated in the Safe Manning Certificate, together with the following additional personnel:

    - 1 Third Engineer
    - 1 Pumpman
    - 1 Electrical Officer
    - 2 Fitters
    - 2 Oilers
    - 2 Wipers
    - 2 Seamen
    - 2 Messmen

2. All of the officers held certificates of competency valid for oil tankers and had satisfactorily completed the tanker training required by Regulation V/1 of the STCW Convention. They also either held valid Bahamas Maritime Authority endorsements recognising these certificates or had made application for such endorsements, except for two Third Engineers. While they both held valid certificates of competency, one of them was required to hold a Bahamas Maritime Authority recognition endorsement as required by paragraph 5 of STCW Regulation 1.2.

3. All officers on Prestige having responsibility for cargo operations had satisfactorily completed tanker training as specified in section A-V/1 of the STCW Code, and ratings engaged on cargo duties had also competed the requisite tanker training.

THE COMMONWEALTH OF THE BAHAMAS

THE BAHAMAS MARITIME AUTHORITY

SAFE MANNING CERTIFICATE FOR BAHAMIAN REGISTERED FOREIGN - GOING SHIPS *

Ship's Name	Port of Registry	Official Number
Prestige	NASSAU	725327

The Bahamas Maritime Authority hereby state that in their view, having regard for the principles and guidelines set out in IMO Resolution A.481 (XII), the ship named in this certificate will be considered to be safely manned within the meaning of the Merchant Shipping Act, 1976 provided that when going to sea the ship has not less than the number and grades of the personnel shown in the following table and that the special conditions, where inserted, are complied with.

This certificate is valid only in relation to the particulars of the ship shown in the application form and the natureof the service stated in that application.

Nothing in this certificate invalidates any provision of the Merchant Shipping Act, 1976 or any Rules or Regulations made thereunder, as regards the carriage of certificated personnel.

To be considered part of this minimum manning certificate, all deck and engine room ratings must have undertaken at least six months sea-going experience whilst over the age of sixteen.

Master	1	Chief Engineer	1	Category 1 Seaman	2
Mate	1	2nd Engineer	1	Category 2 Seaman	2
2nd Mate	1	3rd Engineer	1	Category 3 Seaman	1
3rd Mate	1	4th Engineer	-	E.R. Ratings	1
Radio Officer	-	Assit. Engineer	-		
Doctor	-	Cook	1		

Special Conditions :

One officer, but not the Master, is required to hold a GMDSS General Operator Certificate.

* This certificate is applicable only to officers and ratings in the deck and engine departments, and other certificated personnel.

09/12/98 London

Date and place of issue

BAHAMAS MARITIME AUTHORITY LONDON

Director / Deputy Director of Maritime Affairs

APPENDIX C

Condition of ship

- Classification society surveys
- Port State Control Inspections
- SIRE inspection
- ISM Certification
- Bahamas Maritime Authority Inspection
- Master's tank inspections

Classification Society Surveys

1. The vessel was classed by the American Bureau of Shipping, and remained in class from the time of building until the date of loss. Surveys required by the Enhanced Survey Procedures for tankers were carried out by the American Bureau of Shipping concurrently with the class and other statutory surveys.

2. The Fifth Special Survey was carried out at Guangzhou, China, between 2 April and 19 May 2001. Most of the close up survey and all of the tank testing was carried out while the vessel lay afloat at anchor. Access for the close up surveys was provided by rafting. The vessel entered the Cosco (Guangzhou) Shipyard on 10 April 2001 and was dry-docked from 7 to 12 May.

3. Thickness measurements were performed by Dimitrios Thomas Marine Limited. Measurements were taken in the following locations in accordance with ABS requirements:

    - Main deck
    - Forecastle deck
    - Wind and water strakes (full length)
    - Bottom shell plating (full length)
    - Frames in fore and aft peak tanks
    - All frames in 2 Port and Starboard after wing tanks and 3 Port and Starboard wing tanks
    - All frames in 2 Starboard forward wing tank
    - One frame in each of 1 to 4 Centre tanks, slop tanks, 1,4 and 5 Port and Starboard tanks
    - All transverse bulkheads in cargo tanks
    - Girth belts forward of frames 60, 67, 72, and 77.

4. Thickness measurements were also taken in areas suspected of wastage, as follows:
    - Foredeck at frames 90 to 91
    - Bottom shell plating in 1 Port and Centre tanks
    - Shelf plate of bulkhead at frame 61
    - All wash bulkheads

5. On completion of repairs and testing, all replaced steel in the Fore Peak, Aft Peak, and 2 Port and Starboard after wing tanks was coated with epoxy paint. No coating was applied in 3 wing tanks. The surveyor recorded the condition of the tanks as shown in the table below:

Condition of cargo and ballast tanks after Special Survey No 5 May 2001				
Tank	**Close up examination**	**Corrosion Protection**	**Coating Condition**	**Substantial Corrosion**
Cargo Tanks				
1 to 4 Centre tanks	Yes	Not protected	Not applicable	None
Cargo Slop tanks P and S	Yes	Not protected	Not applicable	None
1, 2(Fwd) and 4 wing tanks P and S	Yes	Not protected	Not applicable	None
Ballast tanks				
Fore Peak and Aft Peak	Yes	Coated	Fair	None
2 P & S after wing tanks	Yes	Coated	Fair	None
3 P & S wing tanks	Yes	Not protected	Not applicable	None

6. The criteria used by the surveyor for the tank conditions were those applicable to the Enhanced Survey requirements.

7. On conclusion of the Special Survey there were no outstanding recommendations or conditions of class. The surveyor issued short term certificates pending issue of the full term certificates from the ABS office in Houston, as follows:

   - Safety Radio Certificate - a conditional certificate valid to 18 June 2001, full term certificate to be issued on rectification of a fault in the S Band radar.
   - Safety Equipment Certificate - full term certificate issued, valid to 31 March 2006
   - Safety Construction Certificate - full term certificate issued, valid to 18 October 2001
   - IOPP Certificate - interim certificate valid to 18 October 2001

8. The IOPP Certificate issued at Guangzhou had two supplements attached. One certified that the vessel was fit to operate as an oil tanker in the COW mode using

hydrostatic balance loading, and the other that the vessel was fit to operate in the CBT mode with clean ballast tanks.

9. The first annual class survey after the Fifth Special Survey was carried out at Dubai between 15 and 25 May 2002. The ABS surveyor was the same surveyor had also carried out part of the annual survey of the vessel in 2000, also at Dubai. The survey took place with the vessel afloat and at anchor.

10. No inspection of any cargo or ballast tanks was made during this survey. Some minor steelwork repairs were carried out. These were mostly cropping and renewing supporting brackets for mushroom ventilator pipes and other deck fittings.

11. There were no outstanding recommendations at the end of the Annual Survey.

Port State Control Inspections

1. The vessel was subjected to port state control inspections in European ports as indicated in the table below:

Port State Control Inspections				
Date	**Country**	**Port of inspection**	**No. of Deficiencies**	**Vessel detained**
22.05.92	Italy	Miazzo	Nil	No
20.09.93	United Kingdom	Newcastle	17	No
06.04.94	The Netherlands	Rotterdam	15	No
24.11.94	The Netherlands	Rotterdam	18	No
29.06.95	Germany	Hamburg	8	No
05.07.95	United Kingdom	Hull	Nil	No
01.09.99	The Netherlands	Rotterdam	3	No

2. None of the deficiencies recorded in these inspections were of a serious nature, and the vessel was not detained at any time. Universe Maritime did not assume responsibility for the management of the vessel until 1994, and were not involved in any way with port state control inspections before then. An inspection of the vessel was made at St Petersburg on 29 October 2002, but it related solely to pollution prevention.

3. The vessel was inspected by the United States Coast Guard while in American ports

on 6 occasions between 10 June 1998 and 25 June 1999. Details of these inspections are contained in the table below:

US Coastguard Inspections

Date	Port	Deficiencies
10.06.98	Philadelphia	3 minor items of fire fighting equipment to be replaced Emergency stop on one cargo pump to be repaired Lifeboat and fire drill to be carried out
3.09.98	LISMS	Nil
15.04.99	LISMS	Nil
19.04.99	New York	Secondary gyro compass not readily available, to be rectified before sailing
19.05.99	LISMS	Nil
25.06.99	Baltimore	Nil

SIRE Vessel Inspection

1. A SIRE inspection (Appendix G) was carried out on Prestige by an inspector on behalf of the Chevron Texaco Shipping Company on 13 March 2002 at Karachi. The results of the inspection indicate the vessel was in satisfactory condition and the standard of operation acceptable. No major deficiencies were recorded in the inspection report.

2. On receipt of the inspection report Chevron Texaco advised the managers of Prestige that the vessel had successfully passed the inspection.

ISM Certification

1. When Prestige was first registered in The Bahamas the owners nominated Laurel Shipping as the managers of the vessel. Bureau Veritas were appointed to carry out ISM certification procedures and the initial audit of Laurel Shipping took place on 24 February 1998. A Document of Compliance valid for the operation of oil tankers and bulk carriers was issued on 24 February 1998. This was valid to 24 February 2003 subject to annual audits being carried out satisfactorily. The only actions required by the managers were to report the details of the company to the Bahamas Maritime Authority, review the Safety Management System and carry out an emergency drill on the Prestige. All of these actions were completed and auditors advised.

2. The Document of Compliance issued to Laurel Shipping was renewed after satisfactory audits on 21 May 1999 and 19 May 2000. Parallel audits were carried

out on Universe Maritime simultaneously with the audits of Laurel Shipping. Management of Prestige was transferred to Universe Maritime Limited on 24 January 2001. An audit was carried out on the Prestige under the Universe Maritime Safety Management System and an Interim Safety Management Certificate issued on 31 January, valid for six months. Five non-conformities were recorded during this audit, as follows:

- No documentary evidence that Third Mate has received familiarization instruction prior to sailing.
- No documentary evidence that a pre arrival check list was established prior to arrive at Bahrain on 20.01.01.
- No documentary evidence that a passage plan was established for the voyage from Keamari to Khorfakkan on 18.06.01.
- No documentary evidence that emergency drill procedures have been followed.
- No evidence that flooding drill was carried out in February 2001.

3. All of these non-conformities were resolved to the satisfaction of the auditors and a full term Safety Management Certificate was issued on 19 July 2001 with a five year validity. The renewal audit was not required to be completed before 20 June 2006.

4. A periodical DOC audit of Universe Maritime was carried out 23/24 May 2002. Eight non-conformities were found, none of which was classed as a major non-conformity. These included such items as: no evidence of one crew member having had familiarisation training; no crew appraisals found in office; two officers on one ship had no flag state endorsements on their Certificates of Competency; the periodicity of on board inspections by superintendents not found defined; and such like. Actions for correction for all non-conformities were put in hand.

5. Following the loss of the Prestige, Bureau Veritas conducted an additional audit of Universe Maritime at the request of the Bahamas Maritime Authority. One observation and six non-conformities were listed, none of which was classed as a major non-conformity. They were recorded as follows:

- Company investigation and analysis of the Prestige incident was not completed as the vessel's master is still not available for the Company.
- Company's SMS does not include the Administration's requirement for annual inspections (BMA Circular 10)
- No record was found that the Greek Fighter's incident had been reported to the Administration.
- 'List of Books' (Company Library) was found not updated and not controlled.
- Various Departments' Circulars sent onboard the company's vessels were found not controlled. Circulars were not part of the Company's SMS.
- Although the company has included in its SMS a comprehensive list of shipboard operations, no relevant procedure was found for their preparation (incl. plans and instructions)

- The Management Review of 27/12/02 was not sufficiently thorough to identify various deficiencies in the Company's SMS documented during this audit.

Bahamas Maritime Authority inspections

1. The vessel was inspected by a Bahamas Maritime Authority inspector at Khorfakkan on 17 December 2000. The following deficiencies were recorded during this inspection:

   - Wastage of port anchor chain, calibration required
   - Several studs on starboard anchor chain missing and to be replaced
   - Echo sounder inoperable
   - Lifeboat embarkation light fixtures requiring repair
   - Calibration of magnetic compass required
   - Leakages on deck fire main to be repaired
   - Blocks and sheaves of cargo gear to be serviced
   - Illegible fire plan to be replaced
   - Merchant Shipping Notices to be supplied to vessel
   - Three officers to obtain Bahamas' licences

2. The Bahamas Maritime Authority contacted the managers of the vessel on 18 December 2000 concerning the deficiencies and requested confirmation that corrective action would be taken to make good the deficiencies. The managers responded on 23 January 2001 with details of action that had been taken. The only outstanding action related to the anchor chains, which was planned to be done at the next dry-docking scheduled to take place about two months later.

3. The Bahamas annual inspection due in December 2001 (plus or minus three months) was not carried out.

Tank inspections by Master/Chief Officer

1. It was company procedure for the ballast tanks to be inspected by the ship's crew at intervals of six months. The Master and Chief Officer inspected the ballast tanks while the ship lay at St Petersburg on the following dates;

   - 15 September 2002 — 2 Port and Starboard after wing tanks
3 Port and Starboard wing tanks
   - 20 October 2002 — Fore Peak Tank
Aft Peak Tank
   - 30 October 2002 — 2 Port and Starboard after wing tanks
3 Port and Starboard wing tanks

2. The tanks were reported to be in good condition and without any defects in all of the above inspections.

APPENDIX D

Employment of ship

- Storage operations at St Petersburg
- Employment of the Prestige 1996 to 2002

Storage operations at St Petersburg

1. During the vessel's stay in St Petersburg, fuel oil cargo was loaded from barges and discharged into the tankers 'Black Point', 'Paean', 'Grizzly' and 'Gudermes'. Loaded barges berthed alongside the Prestige on 45 occasions on the port side and on 56 occasions on the starboard side. Tankers berthed alongside on eight occasions, six of which are known to have been on the port side. The details of the tankers are shown in the table below:

Ship Name	Grizzly	Gudermes	Paean
Vessel type	Tanker	Tanker	OBO
GRT	20 599	17 824	32 607
NRT	10 876	9 020	18 921
Deadweight	36 102	32 039	53 700
Length	188.96	170.85	207.0
Breadth	27.03	25.8	32.24
Load Draught	11.025	11.28	12.65

2. Five Kursk type fenders were rigged on each side of Prestige at St Petersburg. The capacity of the barges coming alongside was around 2000 to 3000 tonnes. The barges came alongside to discharge into the Prestige, while the tankers came alongside in ballast to be loaded from the Prestige. Various bunker, fresh water and slop barges also came alongside from time to time at St Petersburg.

Final Loading

After loading a part cargo at St Petersburg, the Prestige called at Ventspils, loading from the tanker Gudermes berthed on the starboard side.

EMPLOYMENT OF PRESTIGE 1996 – 2002

Charter party			Cargo	Loading Port	Discharging Port
From	**To**	**Days**			
26.02.96	07.04.96	41	No. 6 Fuel Oil	Yombo	St. Eustatius Guayanilla
24.04.96	25.05.96	32	No. 6 Fuel Oil	Punta Cardon Marsazlokk	Marsazlokk Constanza
27.05.96	18.06.96	22	Arabian Light Crude	Sidi Kerir	Leixoes
20.06.96	26.07.96	37	Sahara Blend Crude Lokele Crude	Arzew Moudi	Novadhibou Genoa
02.08.96	09.08.96	39	Fuel Oil	Suez	Cagliari Gela
09.09.96	25.09.96	17	Arabian Light Crude	Sidi Kerir	Leixoes
03.10.96	11.11.96	40	Brass Light Crude	Brass River	Sines Leixoes
13.11.96	21.11.96	9	Brass Crude	Tazerka	Fos
04.12.96	21.12.96	18	Brass Light Crude Antan Blend	Brass River Antan	Algeciras
25.12.96	08.01.97	15	Zarzaitine Crude	La Skhirra	Tarragona
Total for 1996		**270**			
12.01.97	21.01.97	10	Crude Oil	Marsa El Hariga	Cartagena
25.01.97	01.03.97	35	Vacuum Gas Oil	Milford Haven Le Havre	Texas City SW Pass
07.03.97	11.04.97	36	Heavy Fuel Oil Light Fuel Oil Low Sulphur Fuel Oil	Mamonal St. Eustatius	St. Eustatius Ravenna
26.04.97	05.06.97	41	Fuel Oil Shops Fuel Oil	Limbe Bonny	SW Pass Houston
11.06.97	04.08.97	55	Crude Oil Lion Crude Fuel Oil	La Salina Lion Terminal Cape Limbe	Abidjan Cape Limbe New York
19.08.97	05.12.97	70	LP Fuel Oil	Bonny	New York
10.11.97	05.12.97	26	HS Str Run Residue	Rabigh Bay	Agioi Theodoroi
06.12.97	14.01.98	40	HS Fuel Oil	Santa Panagia	New York Philadelphia
Total for 1997		**313**			
30.01.98	22.03.98	52	A-960 Str Run Fuel Oil	Yanbu	Algeciras Las Palmas
27.03.98	12.05.98	47	Str Run Fuel Oil 380 CST	Rabigh	Dunkirk
23.05.98	16.06.98	55	Lion Crude	Abudjan	Philadelphia
02.07.98	26.07.98	25	Yombo Fuel Oil	Yombo	Riverhead
27.07.98	07.09.98	43	Yombo Fuel Oil	Yombo	Riverhead
08.09.98	22.10.98	45	VGO High Sulphur Low Sulphur ATM Residue	Tallin Tees	New York Delaware
09.11.98	04.12.98	26	Fuel Oil M100	Tallin	Point Tupper Norfolk
16.12.98	11.01.99	27	LSSR Fuel Oil	Wilhelmshaven	Riverhead
Total for 1998		**320**			
30.01.99	26.02.99	28	Fuel Oil	Yombo	Riverhead

Charter party			Cargo	Loading Port	Discharging Port
From	**To**	**Days**			
27.01.99	17.04.99	81	Str. Run Fuel Oil Yombo Fuel Oil	Banana Yombo	Riverhead
18.04.99	03.06.99	47	LSSR ATM Residue Low Sulphur ATM Residue	Whitgate Tees	Corpus Christi
12.06.99	26.06.99	15	Fuel Oil No. 6 Fuel Oil No. 6	Pointe A Pierre St. Eustatius	St. Eustatius Piney Point
17.07.99	15.08.99	30	Str. Run M100 Fuel Oil	Klaipeda	Texas City Houston
30.08.99	10.09.99	11	Fuel Oil	Rotterdam	Singapore
23.10.99	10.11.99	19	Fuel Oil	Jubail	Fujairah
19.11.99	01.01.00	44	Suez Mixed Crude Oil	Ras Shukheir	Vadinar Mumbai
Total for 1999		**275**			
07.01.00	06.02.00	31	M100 Fuel Oil	Fujairah	Singapore
17.02.00	09.03.00	21	High Sulphur Fuel Oil 380 CST	Jubail	Khorfakkan
02.04.00	09.05.00	37	Recovered Emulsion Oil	Fujairah Singapore	Jiangyin
18.05.00	03.07.00	47	Str Run Fuel Oil 180 CST	Ras Tanura	Huangpu
08.07.00	04.12.00	150	Fuel Oil 380 CST High Sulphur Fuel Oil High Sulphur Fuel Oil 180 CST High Sulphur Fuel Oil 380 CST High Sulphur Fuel Oil Fuel Oil B791 380 CST High Sulphur Fuel Oil High Sulphur Fuel Oil 380 CST	Bahrain Sharjah Khor Fakkan Bahrain Sharjah Bahrain Sharjah Bahrain	Khor Fakkan Bin Quasim Hangpu Sharjah Bin Quasim Fujairah Bin Quasim Fujairah
06.12.00	19.12.00	14	Storage	Khorfakkan	
Total for 2000		**300**			
03.01.01	13.01.01	11	Fuel Oil A960 High Sulphur Fuel Oil 80 CST (B961) High Sulphur Fuel 180 CST Fuel Oil 380 CST Reduced Crude Oil	Ras Tanura Bahrain Sharjah Bahrain Ras Tanura	Fujairah Bin Quasim Sharjah Bin Quasim Fujairah Sriacha

Charter party			Cargo	Loading Port	Discharging Port
From	**To**	**Days**			
05.06.01	28.11.01	177	High Sulphur Fuel Oil Low Sulphur Fuel Oil STR Run Fuel 180 CST Fuel Oil 280 CST Low Sulphur Fuel Oil High Sulphur Fuel Oil Low Sulphur Fuel Oil High Sulphur Fuel Oil 180 High Sulphur Fuel Oil CST High Sulphur Fuel Oil 180 CST High Sulphur Fuel Oil 180 CST High Sulphur Fuel Oil 180 CST High Sulphur Fuel Oil 380 CST High Sulphur Fuel Oil 180 CST Fuel Oil 380 CST Abadan STR RUN Fuel Oil 280 CST	Fujairah Other Tankers Aden Fujairah Other Vessels Khor Fakkan Other Vessels Fujairah Fujairah Fujairah Khor Fakkan Other Vessels Other Vessels Bahrain Fujairah Other Vessels Other Vessel	Keamari Other Tankers Port Sudan Fujairah Other Vessels Keamari Bin Quasim Bin Quasim Bin Quasim Bin Quasim Other Vessels Bin Quasim Other Vessels Fujairah Other Vessels Bin Quasim Singapore Pasir Gudang
15.12.01	19.12.01	5	Grade Not Known	Fujairah	Kuito
Total for 2001		**293**			
04.01.02	09.01.02	6	Grade Not Known	Fujairah	Kuito
06.03.02	15.03.02	10	Iranian Light Crude	Kharg Island	Karachi
18.03.02	10.04.02	24	High Sulphur Fuel Oil 179 CST	Khor Fakkan	Bin Quasim
12.04.02	14.04.02	3	High Sulphur Fuel Oil 170 CST	Khor Fakkan	Bin Quasim
13.06.02	30.10.02	140	Storage Vessel	St. Petersburg	
01.11.02	05.11.02	5	Fuel Oil M100	St. Petersbury Ventspils	
06.11.02	13.11.02	8	On Passage		
Total to 13.11.02		**196**			

APPENDIX E

Arrangements for SAR and pollution control in Spain

- Search and rescue organisation in Spain
- Spanish National Contingency Plan for Sea Pollution

Search and rescue arrangements in Spain

1. The following is a description of what is believed to be the search and rescue arrangements in Spain.

2. The competent authority for maritime search and rescue in Spain is the Sociedad de Salvamento y Seguridad Maritima, commonly referred to as SASEMAR. This is understood to be a state owned organization with headquarters in Madrid. It is presided over by the General Director of Merchant Marine, who is responsible to the Ministry of 'Fomento' (Development) (formerly Ministry of Transport). The Director of Merchant Marine has under his jurisdiction the Capitania Maritima at various coastal locations. They deal with matters such as pilotage and towage within Spanish waters. Coastguard duties are carried out by the Guardia Civil, who have numerous stations around the Spanish coast.

3. The national Marine Rescue Co-ordination Centre (MRCC) is based at the SASEMAR headquarters in Madrid. It is responsible for co-ordinating all search and rescue operations within the area of the Atlantic Ocean and Mediterranean Sea. These areas are divided into North Coast, South Coast, Mediterranean and Canary Islands Regions.

4. The North Coast Region extends around the north coast of Spain from the border with France to the border with Portugal, and seaward to latitude 45°N and longitude 30°W. Within the Region there are MRCCs at Bilbao, Finisterre and Gijon, and Marine Rescue Co-ordination Sub-centres (MRSC) at La Coruna, Santander and Vigo. All MRCCs and MRSCs are continuously manned 24 hours per day.

5. There is a network of VHF DSC Coast Radio Stations, which maintain a 24 hour continuous listening watch along the north coast of Spain. La Coruna Coast Radio Station controls stations at Cabo Ortegal, La Coruna, Finisterre, La Guardia and Vigo by remote operation. La Coruna MRSC controls stations at Cabo Priorino Chico and La Coruna by remote operation. Finisterre MRCC also has a VHF DSC Coast Radio Station which in turn controls remotely stations at Finisterre, Monte Beo, Monte Taume, and Monte Xastas. All manned coast radio stations are connected by telephone to all Spanish MRCCs.

6. SASEMAR maintain a salvage tug at Vigo. At the time of the incident, the tug on station at Vigo was Ria de Vigo, owned by the salvage company Remolcadores Nosa Terra SA, and chartered to SASEMAR. According to the United Kingdom Admiralty Sailing Directions, this tug is maintained on 40 minutes notice, and may be stationed at La Coruna on occasions.

7. The helicopter Helimer Galicia, stationed at La Coruna, is owned by SASEMAR. The helicopters Pesca 1 and Pesca 2, owned by the Xunta de Galicia, were also made

available to SASEMAR under an agreement between the national and provincial governments. A further helicopter Helimer Cantabrico was also involved in transporting personnel to and from the Prestige.

Spanish National Contingency Plan for Accidental Sea Pollution

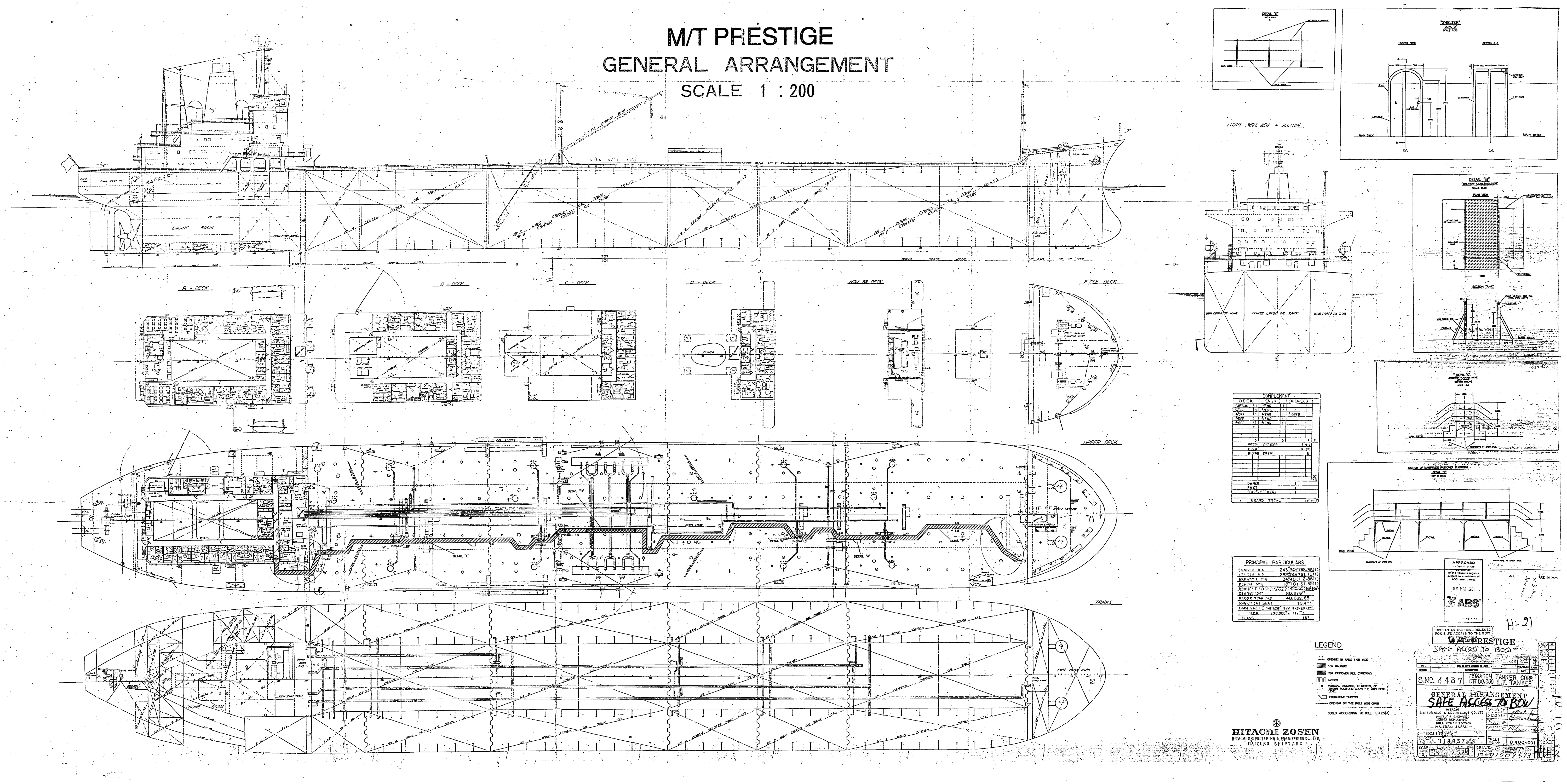
1. It is understood that a national plan for rescue at sea and control of pollution was approved by the Ministry of Public Works on 23 February 2001, and that the Department of Merchant Shipping had power to activate the plan. When a search and rescue operation is in progress, and there is a threat of pollution, responsibility for the control of the operation in Galicia rests with an emergency committee, which is understood to be headed by an officer of the Capitania Maritima.

2. A simulation exercise was conducted at La Coruna in November 2001 with participation of MRCC and SASEMAR personnel. One of the scenarios included in this exercise was the simlation of a collision between a petrol tanker and a general cargo ship, with the tanker remaining in the area of the collision. Following an appraisal of this simulation exercise it was recommended that the presence of qualified technical personnel was required to assess the structural state of the tanker and its inert gas system. In the event of a negative report on the condition of the vessel, the tanker would not be allowed to enter a port or anchorage, and salvage services would be dispatched to keep the vessel away from the coast. The aim of keeping the vessel away from the coast was not specified in the recommendation or what was intended to happen to the ship. In the case of a positive report on the vessel, due consideration would be given to moving the vessel to a suitable anchor ground to offload or transfer the cargo. It is not known if this recommendation from the exercise was incorporated in the National Contingency Plan. It is likely however that SASEMAR personnel dealing with the Prestige would have been aware of the recommendation.

APPENDIX F

Plans and Diagrams

1. General Arrangement
2. Tank Capacities
3. Emergency Towing Equipment on the Prestige


M/T PRESTIGE
GENERAL ARRANGEMENT
SCALE 1 : 200
ENGINE ROOM
NO 4 CENTER CARGO OIL TANK
NO 3 WING CARGO OIL TANK
NO 2 CLEAN BALLAST TANK
NO 2 CENTER CARGO OIL TANK
NO 1 WING CARGO OIL TANK
NO 1 CENTER CARGO OIL TANK
A - DECK
B - DECK
C - DECK
D - DECK
NAV BR DECK
F'CLE DECK
UPPER DECK
TANKS
FORE PEAK TANK
DETAIL "A"
DETAIL "B"
DETAIL "C"
DETAIL "D"
DETAIL "E"
FRONT WALL VIEW & SECTION
WING CARGO OIL TANK
CENTER CARGO OIL TANK
"SHELTER"
DETAIL "A"
SCALE 1:25
LOOKING FORE
SECTION A-A
MAIN DECK
DETAIL "B"
"WALKWAY CONSTRUCTION"
SCALE 1:25
PLAN VIEW
SECTION "A-A"
SKETCH OF MANIFOLDS PASSOVER PLATFORM
FOOTSTOPS AT EACH SIDE
COMPLEMENT
DECK
ENGINE
BUSINESS
CAPTAIN
C/OFF
2/OFF
3/OFF
4/OFF
C/ENG
1/ENG
2/ENG
3/ENG
4/ENG
PURSER
PETTY OFFICER
CREW
RIDING CREW
OWNER
PILOT
SPARE (OFFICER)
GRAND TOTAL
PRINCIPAL PARTICULARS
LENGTH O.A 243.50 (798.88 ft)
LENGTH B.P. 232.00 (761.15 ft)
BREADTH MLD 34.40 (112.86 ft)
DEPTH MLD 18.70 (61.35 ft)
DEADWEIGHT 80,276
GROSS TONNAGE 40,632.65
SPEED (AT SEA) 15.4
CLASS ABS
LEGEND
OPENING IN RAILS 1.0M WIDE
NEW WALKWAY
NEW PASSOVER PLT. (GANGWAY)
LADDER
VERTICAL DISTANCE, IN METERS, OF SHOWN PLATFORM ABOVE THE MAIN DECK LEVEL
PROTECTIVE SHELTER
OPENING ON THE RAILS WITH CHAIN
RAILS ACCORDING TO ICLL REG.25(3)
APPROVED
ABS
HITACHI ZOSEN
HITACHI SHIPBUILDING & ENGINEERING CO., LTD.
MAIZURU SHIPYARD
H-21
M/T PRESTIGE
SAFE ACCESS TO BOW
S.NO. 4437
MONARCH TANKER CORP.
DW 80,000 L.T. TANKER
GENERAL ARRANGEMENT
SAFE ACCESS TO BOW
114437
D.400-001
01009593

Tank Capacities

Cargo Tanks	Frame Aft	Frame Forward	Capacity (m³) (100 %)
No 1 Centre	81	91	12206
No 2 Centre	71	81	12324
No 3 Centre	61	71	12324
No 4 Centre	51	61	12457
No 1 Wing Port	81	91	7061
No 1 Wing Starboard	81	91	7061
No 2 Wing Port	76	81	3791
No 2 Wing Starboard	76	81	3791
No 3 Wing Port	61	71	7582
No 3 Wing Starboard	61	71	7582
No 4 Wing Port	54	61	5263
No 4 Wing Starboard	54	61	5263
Slop Tank Port	51	54	2053
Slop Tank Starboard	51	54	2053
Total Cargo Capacity			**100811**

Ballast Tanks	Frame Aft	Frame Forward	Capacity (m³) (100 %)
Fore Peak Tank	93	115	3140
No 2 Wing Port (Aft)	71	76	3791
No 2 Wing Starboard (Aft)	71	76	3791
No 3 Wing Port	61	71	7582
No 3 Wing Starboard	61	71	7582
Aft Peak Tank	-8	11	506
Total			**26392**

Fuel Tanks	Frame Aft	Frame Forward	Capacity (m³) (100 %)
Forward Fuel Oil Tank Port	92	93	818
Forward Fuel Oil Starboard	92	93	660
Aft Fuel Oil Port	36	50	1234
Aft Fuel Oil Starboard	36	50	1486

Diesel Oil Tank Port	34	44	162
Diesel Oil Tank Starboard	32	44	185
Total			**4545**

Fresh Water Tanks	**Frame** Aft	Forward	**Capacity (m^3)** (100 %)
No 1 Fresh Water Tank Port	11	20	103
No 2 Fresh Water Tank Port	11	14	81
No 2 Fresh Water Tank Starboard	11	14	81
No 3 Fresh Water Tank Port	7	11	89
No 3 Fresh Water Tank Starboard	7	11	60
Distilled Fresh Water Tank	11	20	103
Total			**517**

Emergency towing equipment

1. The vessel was fitted with emergency towing arrangements forward and aft. The aft emergency towing arrangement consisted of a vertical wire storage drum fitted on the after deck on the centreline, 2.5 m forward of Panama lead through which the towing pennant and messenger would pass when the equipment was deployed. The equipment consisted a 40 mm diameter buoyant messenger rope 50 m in length, to which was attached a 20 mm buoyant pick up rope 5 m in length. A flashing light buoy, powered by a sea activated cell, was attached to the end of the messenger. The towing pennant was 78.3 mm diameter flexible steel wire rope 85 m in length. The wire storage drum was equipped with a braking device with which to regulate the rate of deployment, and the inboard eye of the towing pennant was secured to the base of the structure on which the wire storage drum was mounted. The deck below was strengthened to assimilate the potential load imposed by the towing pennant when in use.

2. The emergency towing arrangement forward consisted of two chain stoppers mounted on the forecastle, with strengthening of the deck structure below. The stoppers were mounted in line with a Panama type lead fitted in the bulwark plating 1400 mm from the centreline on the starboard side. The steel cast bodies of the stoppers were designed for 76 mm diameter chain, secured by means of a hand operated pawl arrangement and locked in position by means of a locking pin. A chain towing pennant would have to be secured in the stopper by heaving the end of the

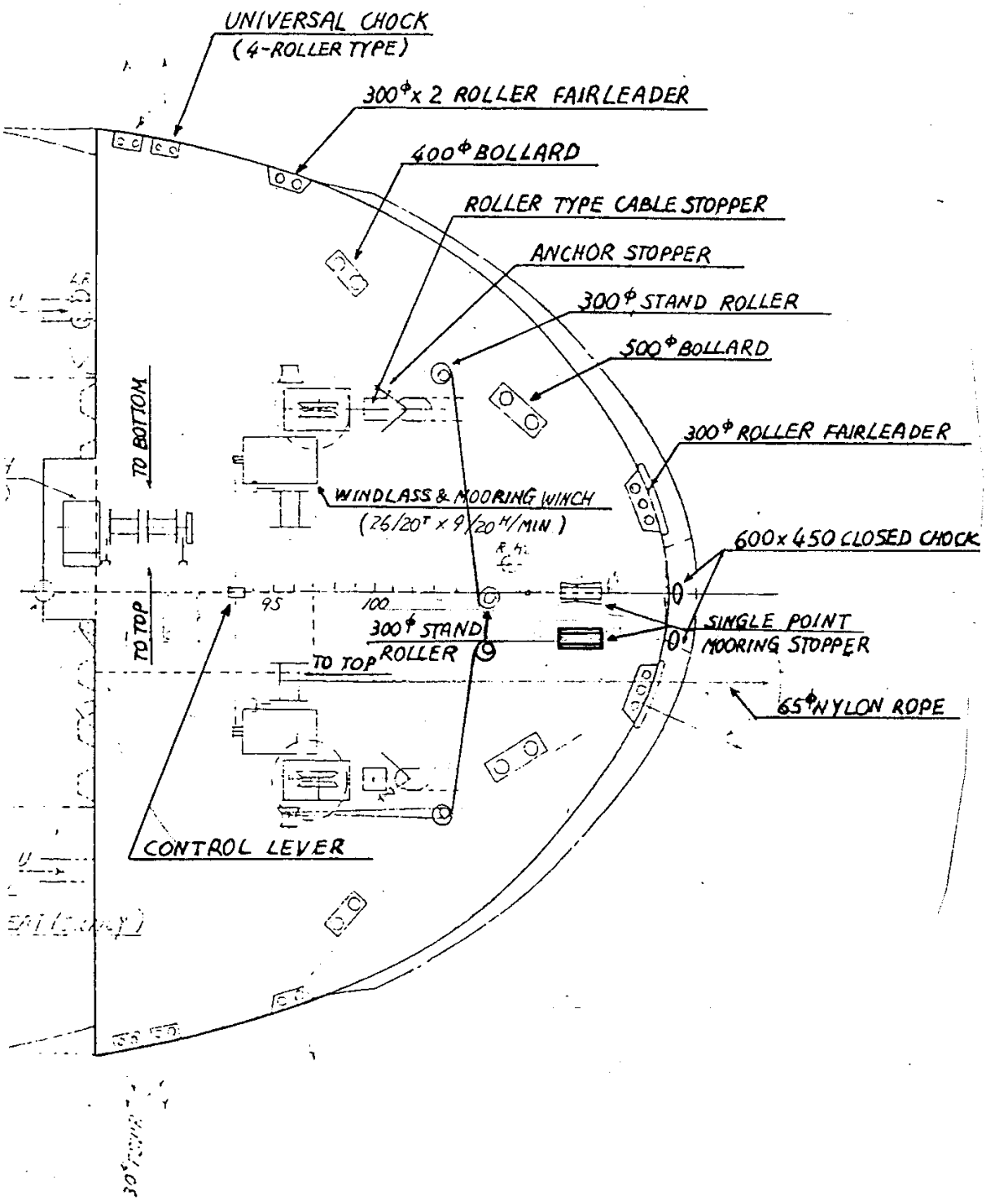
chain through the fairlead by means of a messenger led from the winch drum round a roller stand and through the stopper and fairlead. The towing pennant was recoverable after deployment by means of a wire passed round the base of the wire storage drum and then led to the mooring winch drum via the roller leads adjacent to the centre Panama lead. The emergency towing arrangements on the forecastle could not be used without the use of the steam driven winches.

3. The emergency towing arrangements were approved by the American Bureau of Shipping as meeting the requirements of Regulation II.1.3.4 of the SOLAS Convention, which became mandatory on 1 June 1999

2/42

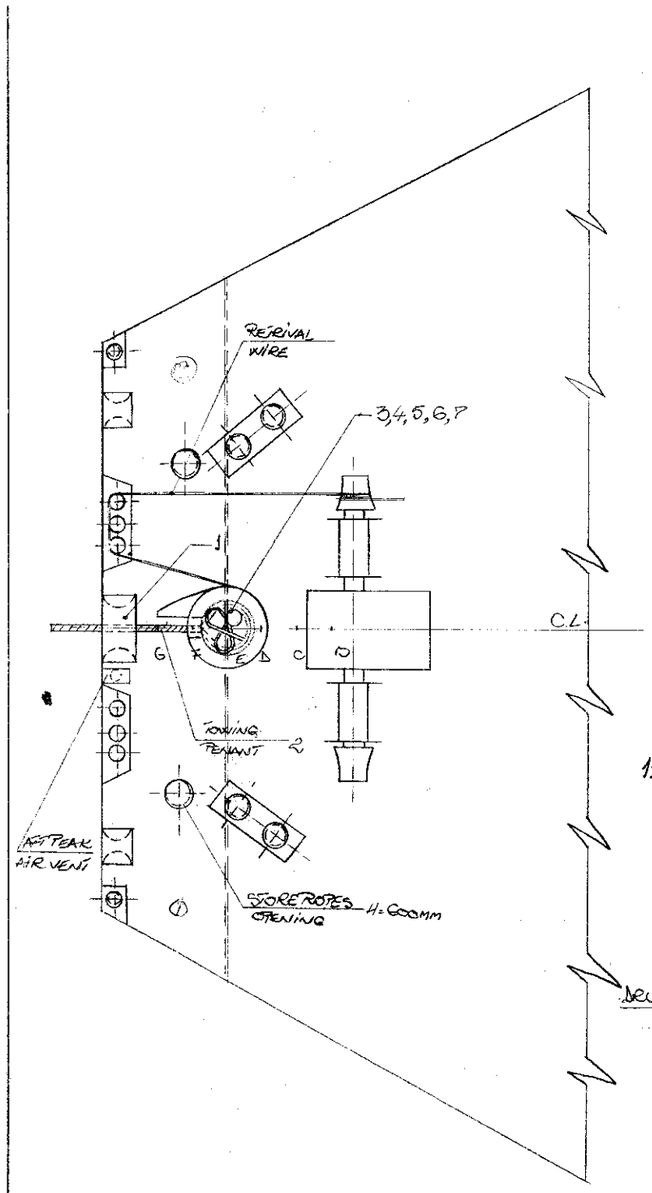
M/T PRESTIGE

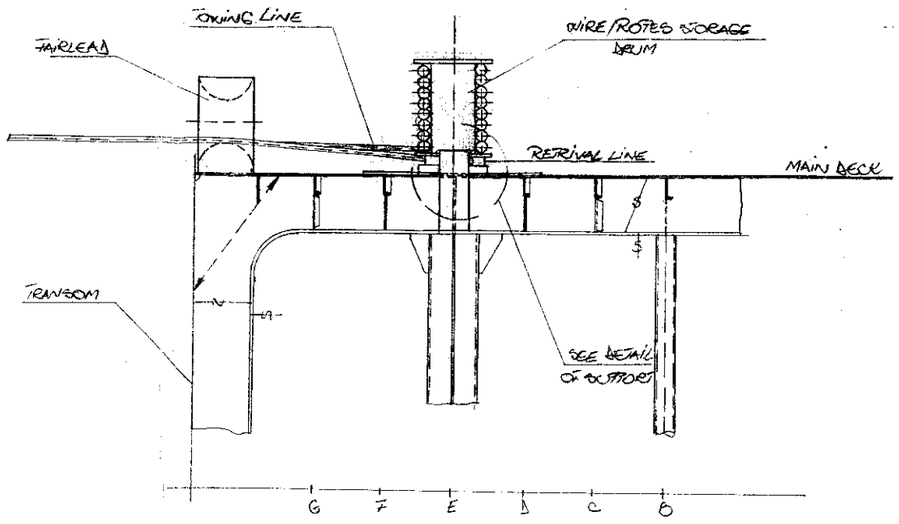
FORWARD MOORING ARRANGEMENT



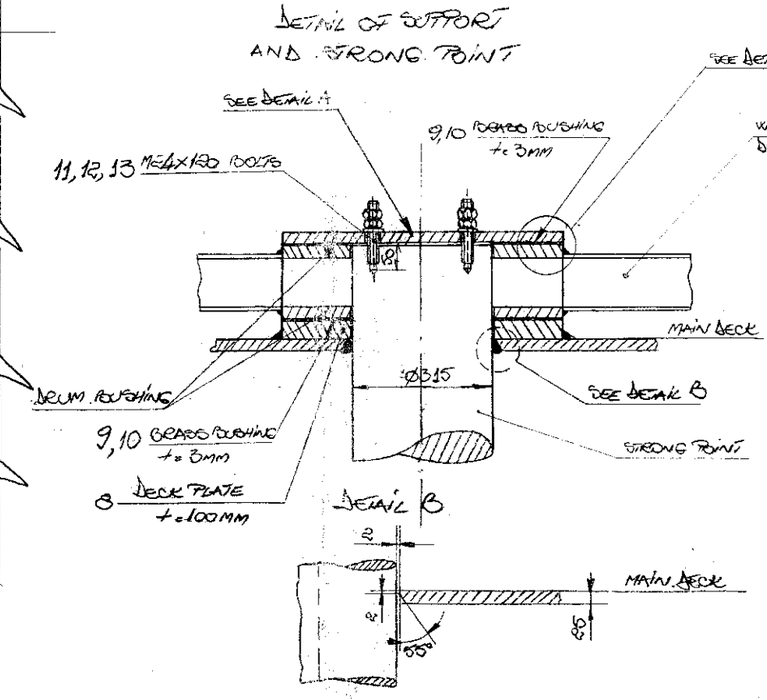
ALL DIMENSIONS IN mm

ELKCO MARINE CONSULTANTS 79 AKTI MIAOULI & 1,KANARI–PIREUS–GREECE TEL: 4528200, TLX: 240079 ELKO, FAX: 4526280	TITLE : M/T PRESTIGE	SCALE: 1:200 DATE: 04/04/01	DWG.No.: H.01.171.4A PROJ.No.: 01031 XM

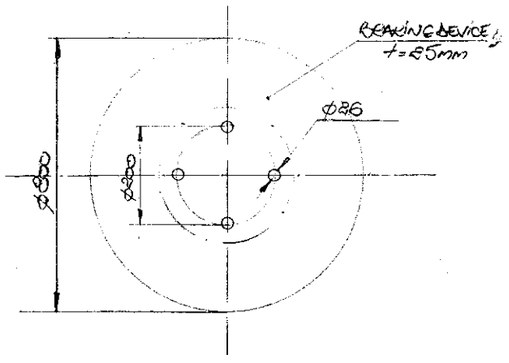




DETAIL OF SUPPORT AND STRONG POINT



DETAIL A



Prestige Aft Mooring Arrangements

APPENDIX G

Inspection Report

SIRE Inspection Report

OCIMF has published SIRE Vessel Inspection Questionnaire (VIQ), Second Edition, 2000. Please advise if you need a copy and we will be glad to mail you the new VIQ booklet

Chevron

ChevronTexaco Shipping Company LLC
Clearance and Vetting Group
San Ramon, CA 94583 - USA
Telephone: 001 (925) 973 4125
Facsimile : 001 (925) 973 4180

To: Universe Maritime Ltd.

Attn.: Operational Control

VIA FAX

Fax No: 3010 612 6206

March 15, 2002

CHEVRONTEXACO VESSEL INSPECTION: PRESTIGE

Inspection Date: March 13, 2002 **Inspection Place: Karaichi**

Thank you for allowing us to inspect your vessel.

The vessel has successfully passed the ChevronTexaco On-board Inspection Program.

We would however appreciate your comments and/or intended actions regarding the attached deficiencies. Please address only items listed as "Observations". Items in the "Comments" section are for our informational purposes only and do not require your response.

Passing this inspection means the above vessel currently complies with our technical requirements. ChevronTexaco generally considers the inspection results to be valid for a period of 12 months for vessels over 15 years of age and to 18 months for those under 15 years of age, from the date the inspection is performed. A negative vessel performance during the period may cause the vessel acceptance into the program to be suspended or rescinded.

This letter is not to be taken as a blanket approval.
ChevronTexaco policy requires a review anytime a vessel is nominated for possible charter or third party use. This review will be based on inspection information, along with other factors such as, but not limited to, past experience with the vessel and its operation, financial stability of the owner, age of the vessel, Terminal feedback reports, etc.

A copy of the full inspection report is being sent to you separately along with instructions for transmitting your comments to the OCIMF SIRE program. At the same time' a copy of the inspection report is also being sent to the OCIMF SIRE program. You are requested to send your comments to SIRE (with a faxed copy to us) within 14 days from your receipt of the inspection report.

If you have any questions, please do not hesitate to contact me.

Best regards,

Tim Smith

Total pages including this cover page: 3
If you have problems with transmission, please call (925) 973 4163

:hevron Shipping Co. LLC - Clearance and Vetting - Confidential
'ESSEL INSPECTION SUMMARY DETAIL REPORT - (VISDINSP)

Vessel Inspection Summary Report

'essel Name PRESTIGE IMO 7372141 DWT 80276.1 Yr Built 1976

'essel Type TANKER

nspection Code FC Parent Name LAUREL SEA TRANSPORT

.ocation KARACHI Operator Name LAUREL SEA TRANSPORT

nspection Date 13-MAR-2002

nspector Name EAST, T.D.

)eficiencies :ount	RQ	SP	Total	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Total
Major																					
Minor	2	1	3					2					1		1	3					7
Tota.	2	1	3					2					1		1	3					7

)bservations (* = Requirements , + = Strong Preferences)

MINOR DEFICIENCIES
*5.9 Does fire fighting equipment meet SOLAS requirements?
5.9.2 Fire hose in accomodation block, jet/spray nozzle found seized. Rectified during inspection.

5.16 Are all lifesaving appliances in good order?
5.16.1 Port lifeboat rudder (wood) partially split

*10.2 Is all mooring equipment in good condition?
10.2 Aft mooring winch clutch handle securing pin missing, replaced during inspection.

12.11 Are engine room, steering compartments and machinery clean and free from obvious leaks?
Minor luboil leaks from main engine and water leaks from no.1 seawater cooling pump.

13.4 Is deck piping in satisfactory condition?
Pipelines were generally spot rusted. Maintenance currently in progress. No significant corrosion or patches.
13.4.8. Minor stean leaks on deck.

13.6 Is accommodation clean and tidy?
Accomodation looking rather 'tired' and untidy in places.

13.10 Are vents and air pipes on freeboard deck in good condition and fitted with closing devices to prevent ingress of water?
Sounding pipe caps in focsle left off.

COMMENT
3.11 Additional Comments
The Greek officers were directly employed by Operators.
The Filipino officers and ratings were employed through a manning agency in Manila, which was owned by Operators, who have full selection rights and maintain files on seafarers.

Chevron Shipping Co. LLC - Clearance and Vetting - Confidential
VESSEL INSPECTION SUMMARY DETAIL REPORT - (VISDINSP)

Vessel Inspection Summary Report

Observations (* = Requirements , + = Strong Preferences)

The officers were Greek/Filipino and the crew were Filipino.
Crew management was satisfactory ,with crew working as a team. The Master and Chief Engineer were experienced in tanker operations, but many of the junior officers were new to this Operator.

ate 14-MAR-2002

Page : 2 of 2

OIL COMPANIES INTERNATIONAL MARINE FORUM ("OCIMF")

OCIMF REVISED PROGRAM ENCOMPASSING COLLECTION AND DISSEMINATION OF SHIP INSPECTION REPORTS

OCIMF PRINTED OPERATOR COVER SHEET WITH OVERLEAF

OCIMF

OCIMF is a voluntary association of oil companies having an interest in the marine transportation and terminalling of crude oil, liquefied natural gas, liquefied petroleum gas. their derivatives and related organic compounds. Essentially, it is concerned with the safe conduct of these operations and the prevention of pollution. It represents its membership before intergovernmental, governmental and other organisations.

OCIMF is incorporated in Bermuda with a branch office in London. The current membership of OCIMF embraces 42 companies and groups world-wide.

Revised OCIMF Ship Inspection Report (SIRE) Programme

Programme

OCIMF has established a ***strictly voluntary*** program ("Programme") whereby OCIMF Members submit their ship [1] inspection reports ("Reports" or "Report") to OCIMF for OCIMF's distribution to OCIMF Members and certain qualifying non-OCIMF Members (collectively referred to herein as "Programme Recipients"). The Programme to which this Document relates is a ***revision*** of an earlier Ship Inspection Report (SIRE) Programme introduced by OCIMF in November of 1993. [2]

Uniform Vessel Inspection Procedure

The Programme requires that participating OCIMF Members follow a uniform Vessel Inspection Procedure. This procedure has two elements i.e., an Inspection Element and a Report Element. The **Inspection Element** consists of a detailed printed Vessel Inspection Questionnaire (VIQ) document which has some 175 Key Questions dealing with safety and pollution prevention which the participating OCIMF Members' ship Inspectors must (with certain exceptions) answer. [3]

These Questions are, in most cases, accompanied by guidance notes, sub-questions and source materials to aid the ship Inspector response to the Key Questions. The VIQ must be converted into, and be answered, in electronic form. This will require the combined use of a computer and specialized OCIMF software. The **Report Element** is in abbreviated form and consists of an electronic conversion of the ship Inspector VIQ responses into a uniform Report format.

Ship Operator Report Involvement

OCIMF Members input their Inspector's electronic VIQ response into an automated central Computer System ("SIRE System") in OCIMF's London offices. Upon receipt in the SIRE System, the VIQ response is automatically converted into an electronic Report in the required uniform format and then electronically stored in the System. Under the Programme, the operator of the ship ("Operator") which is the subject of a Report is given a paper copy of the Report [4] by the OCIMF Member (by mail, courier or facsimile) and afforded the opportunity to give written comment on the Report to both the inspecting OCIMF Member and to OCIMF. Any ship Operator comment on the Reports must be sent to the OCIMF Member submitting the Report and to OCIMF's London offices. ***The sole means of communicating such comments to both the foregoing entities is by facsimile.*** Upon receipt at OCIMF's London office. Operator comments are converted to, and stored in, electronic form in the SIRE System.

As the Report is an abbreviated and reformatted version of the ship Inspector response to the VIQ, the Operator should have in its possession a full paper (blank) copy of the Vessel Inspection Questionnaire (VIQ) Document at or prior to the time the Operator receives this Document and its annexed Report.

Cover Sheet Function
OCIMF Member Reports (i.e., the electronic VIQ responses) and any ship Operator comments on the paper Reports submitted to the Operators must **each** be submitted to OCIMF through the use of separate Cover Sheets. These Cover Sheets, which give key details of the ship Inspection covered by the Reports, are electronically stored in the SIRE System. By electronically scanning these separate Cover Sheets, the SIRE System will automatically match any ship Operator comment received with the appropriate Report, with the result that a requesting Programme Recipient should receive both the Report and the Operator comment.

VPQ and the Programme
OCIMF has published a Vessel Particulars Questionnaire ("VPQ") which asks over 700 separate questions about ship particulars and required or customary on board documents of a permanent or semi-permanent nature, primarily related to safety and pollution prevention. This document is separate and apart from the above discussed Vessel Inspection Questionnaire (VIQ).
The VPQ has been incorporated as an ***optional*** element under the Programme. When used in conjunction with the Programme, this Questionnaire is to be answered by the ship Operator and then sent to the SIRE System. The Questionnaire, however, must be so answered and sent in electronic form. This will require the combined use of a computer and specialised OCIMF software. OCIMF will make this software available to ship Operators free of charge. Once entered into the SIRE System, the VPQ response will be made available to Programme Recipients. ***The SIRE System, however, will accept a VPQ response for a ship only if there is a Report on that ship in the System.***

Programme Index
The SIRE System also creates and feeds a computerised Index giving information about the Reports, Operator Comments and VPQ responses received under the Programme.

Programme Preference
If a complete and up to date VPQ response on the ship which is the subject of the attached Report is not on file in the SIRE System, the ship Operator is encouraged to submit one to the System and thereafter to keep same up to date. It should be remembered that the submission of a VPQ response is a preferred, though not mandatory, element of the Programme.

Programme Output
Programme Recipients can, at their option, receive Programme Output in either electronic or paper form.

VPQ Information
Further information with respect to the Vessel Particular Questionnaire can be obtained by writing or faxing OCIMF at its London offices: 27 Queen Anne's Gate, London, SW1H 9BU England - Fax No. +44 (0)20-7799-3395. Attn. SIRE Programme Manager.

ENCLOSURES
Enclosed are a COVER SHEET and ship inspection Report. The COVER SHEET includes instructions to the ship Operator to enable the Operator to input into the OCIMF Programme comments on the enclosed inspection REPORT.

The Operator will be given the opportunity to pass comment, in respect of each Report, on a one time basis only.

[1] The Programme covers the inspection of bulk oil/product carriers, bulk chemical carriers and gas carriers only.

[2] This Document should be used only for Reports submitted under the Revised OCIMF Ship Inspection Programme.

[3] Some of the Questions are supplemental and need be answered only if the ship is of a certain type.

[4] The OCIMF Member will have the ability (outside the SIRE System) to convert the electronic Inspector VPQ response into a paper Report in the required uniform format.

OCIMF PRINTED OPERATOR COVER SHEET

An Outline of the OCIMF Programme for the collection and distribution of ship Inspection Reports and ship Operator Comments on such Reports is an Overleaf ('OVERLEAF') to this Cover Sheet. Attached to this Cover Sheet is a paper ship inspection Report ('REPORT') described below.

INSTRUCTIONS TO TANKER OPERATOR

If ship Operator desires to make comment ('COMMENT') on the attached Report, the Operator must do so in writing and follow the instructions below as soon as possible, but NO LATER than 14 running days from the date shown in Item 10.. below.

A) Detach this OCIMF Cover Sheet for Tanker Operator from the OVERLEAF and Report.
B) Attach your comment ('Comment') to this Cover Sheet.
C) Make absolutely sure that this Cover Sheet is the TOP sheet.
D) Do NOT place any sheet or document on top of this Cover Sheet.
E) Send by facsimile (using Fine transmission mode) BOTH the Cover Sheet and your Comment (at Operator's cost) to OCIMF at +44 (0)20 7799 3421 and to the Inspecting OCIMF Member at +925-973-4180.

1.	VESSEL NAME AT TIME OF INSPECTION	Prestige
2.	LLOYD'S REGISTRY NUMBER	7372141
3.	DATE OF INSPECTION	13 March 2002
4.	INSPECTING COMPANY	ChevronTexaco Shipping Company
5.	FLAG OF VESSEL AT TIME OF INSPECTION	Bahamas
6.	SUMMER DWT (METRIC TONS)	81564
7.	TANKER OPERATOR	Universe Maritime
8.	DATE OCIMF PRINTED COVER SHEET WITH OVERLEAF AND REPORT ('CS&R') SENT TO OPERATOR	15 March 2002
9.	METHOD CS&R WAS SENT	Courier
10.	MOST PROBABLE RECEIPT DATE OF CS&R BY OPERATOR	4 April 2002
11.	ORIGINAL REPORT	YES
12.	CORRECTED REPORT	NO

AGREEMENT/CONSENTS

Safeguards have been included in the OCIMF Programme to limit access to the OCIMF Computer System and to the distribution of Reports and ship Operator Comments to Programme Recipients. OCIMF, however, accepts no responsibility if these safeguards prove ineffective.
By submitting a copy of this Cover Sheet with Comment to OCIMF, the ship Operator agrees to the Disclaimer in the immediately preceding paragraph and consents to the conversion of this Cover Sheet and the Comment into (and their storage in) electronic form and to the distribution of the Report and Comment to OCIMF Programme Recipients.

WARNING TO SHIP OPERATOR

IF YOU FAIL TO CLOSELY FOLLOW THE ABOVE INSTRUCTIONS, YOUR COMMENT WILL NOT INPUT INTO THE OCIMF SYSTEM AND, THUS, THE ATTACHED REPORT WILL BE DISTRIBUTED TO PROGRAMME RECIPIENTS WITHOUT YOUR COMMENT.
THE OCIMF MEMBER IDENTIFIED IN ITEM 4 ABOVE RETAINS EXCLUSIVE RIGHTS OVER THE ATTACHED REPORT. YOU MAY NOT DISTRIBUTE SUCH REPORT OUTSIDE YOUR INTERNAL ORGANIZATION.

LR Number: 7372141 SERM Reference: 20202336

Oil Companies International Marine Forum

Revised Ship Inspection Report (SIRE) Programme

Cover Sheet for Printed Inspection Report for: Prestige
IMO\LR Number: 7372141
Inspecting Company: ChevronTexaco Shipping Company
Date of Inspection: 13 Mar 2002

Report for Prestige [IMO\LR Number: 7372141, Date: 13 Mar 2002, Port: Karachi, Pakistan]

Section 1.

Chapter 1. GENERAL INFORMATION

1.1	Name of ship	Prestige
1.2	LR/IMO Number	7372141
1.3	Name of OCIMF inspecting Company	ChevronTexaco Shipping Company
1.4	Date of inspection	13 March 2002
1.5	Port of inspection	Karachi, Pakistan
1.6	Name of Inspector	Inspecting Company use only
1.7	Ship operation at time of inspection	Discharging
1.8	Product(s) being handled	Crude oil
1.9	Is an up to date OCIMF Vessel Particulars Questionnaire (VPQ) available on board or in possession of OCIMF inspecting Company/SIRE	Yes
1.10	Ship type	Tanker (Pre-Marpol)
1.11	Hull type	Single hull
1.12	Name of ship Operator	Universe Maritime
1.13	Address of ship Operator	215 - Kifissias Ave. Marousi 15124 Athens Greece
1.14	Telephone Number.	+301 6123402
1.15	Facsimile Number.	+301 6126206
1.16	Address to which copy of report should be sent if different from 1.13	As 1.13
1.17	Date current ship Operator assumed responsibility for ship	13 July 1998
1.18	Flag	Bahamas
1.19	Deadweight	81564
1.20	Year ship delivered from builder	1976
1.21	Classification Society	American Bureau of Shipping
1.22	Date next special survey due	31 March 2006
1.23	Date of last port State control inspection	19 March 2000
1.24	Port of last port State control inspection	Jubail, KSA

Report for Prestige [IMO\LR Number: 7372141, Date: 13 Mar 2002, Port: Karachi, Pakistan]

Additional Comments:
MT. Prestige was found to be a pre-marpol Aframax tanker. At the time of inspection the vessel was carrying permanent ballast in FPT, no.2p&s, no.3p&s.The vessel is currently trading between the Arabian Gulf and Pakistan.
The vessel last drydocked in May 2001 in China , where more than 300 tons of steelwork had been renewed in the ballast and cargo tanks. Next special survey due in March 2006.
The vessel was in fair condition structurally for its age, but would benefit from a cosmetic touch up (presently underway).

VPQ was computer generated.
The following observations were recorded :

1. Garbage management log not fully completed.
2. Fire hose jet/spray nozzle seized.
3. Aft mooring winch clutch handle, securing pin missing.
4. Port lifeboat rudder (wooden) partialy split.
5. Minor steam leaks on deck.
6 Sounding pipe caps in focsle left off.
elding cable in E/room workshop damaged and taped.
8. .o.1 seawater cooling pump in E/Room, mechanical seal leaking.

The vessel has not carried out an emergency ship/shore drill in the past 12 months.

Report for Prestige [IMO\LR Number: 7372141, Date: 13 Mar 2002, Port: Karachi, Pakistan]

3.1 Qualification of Officers

Qualification of Officers	Master	Chief Officer	2nd Officer	3rd Officer	Extra Officer
Nationality	Greek	Filipino	Filipino	Filipino	none
Certificate Held	Class A	Chief Officer	2nd Officer	3rd Officer	Not Applicable
Dangerous Cargo Endorsement	Oil	Oil	Oil	Oil	Not Applicable
Issuing Country	Greece	Phils.	Phils.	Phils.	Not Applicable
Years with Company	5	0	0	1	Not Applicable
Years in Rank	32	1	3	1	Not Applicable
Years on Tankers	42	1	2	1	Not Applicable
How many Months on this vessel	6	4	5	2	Not Applicable
Proficient in English	Yes	Yes	Yes	Yes	Not Applicable

Qualification of Officers	Chief Engineer	1st Engineer	2nd Engineer	3rd Engineer	4th Engineer
Nationality	Greek	none	Filipino	Filipino	Filipino
Certificate Held	Class A	Not Applicable	2nd Eng.	3rd Eng.	4th Eng.
Dangerous Cargo Endorsement	Oil	Not Applicable	Oil	Oil	Oil
Issuing Country	Greece	Not Applicable	Phils.	Phils.	Phils.
Years with Company	3	Not Applicable	1	0	1
Years in Rank	25	Not Applicable	5	2	0
Years on Tankers	20	Not Applicable	19	2	1
How many Months on this vessel	6	Not Applicable	8	3	8
Proficient in English	Yes	Not Applicable	Yes	Yes	Yes

Comments:
The Greek Master and Chief Engineer have not yet completed STCW 95 training. All other officers have completed training and have applied to Bahamas Flag Administration for issuance of Bahamas Licences.

Additional Questions

3.6	What is defined maximum level of blood alcohol content?	0 mg/100ml
3.7	What is the frequency of combined unannounced testing and routine medical examinations?	12 months
3.8	When was last unannounced alcohol test?	01 March 2002
[redacted]	When was last unannounced drug test?	01 March 2002
6.3	What was date of last SOPEP Drill?	27 February 2002

Report for Prestige [IMO\LR Number: 7372141, Date: 13 Mar 2002, Port: Karachi, Pakistan]

Section 2.

Key Questions marked Yes without comment

Chapter 2. CERTIFICATION AND DOCUMENTATION

2.3

Chapter 4. NAVIGATION

4.1, 4.2, 4.3, 4.4, 4.6, 4.7, 4.8, 4.9, 4.10, 4.11

Chapter 5. SAFETY MANAGEMENT

5.1, 5.2, 5.3, 5.4, 5.6, 5.7, 5.10, 5.13, 5.14, 5.17

Chapter 6. POLLUTION PREVENTION

6.4, 6.6, 6.12

Chapter 8. CARGO AND BALLAST SYSTEMS

8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8, 8.9, 8.12, 8.15, 8.16, 8.20

Chapter 9. INERT GAS AND CRUDE OIL WASHING SYSTEMS

9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 9.9, 9.11, 9.12

Chapter 10. MOORING

10.1

Chapter 11. COMMUNICATIONS AND ELECTRONICS

11.1, 11.2, 11.3, 11.4

Chapter 12. ENGINE ROOM AND STEERING GEAR

12.1, 12.2, 12.4, 12.5, 12.7, 12.9, 12.10

Chapter 13. GENERAL APPEARANCE AND CONDITION

13.2, 13.5, 13.8, 13.9

Chapter 14. SHIP TO SHIP TRANSFER SUPPLEMENT

14.1

Chapter 15. CHEMICAL CARRIER SUPPLEMENT

This Chapter is not applicable as the ship is not a chemical carrier

Chapter 16. GAS CARRIER SUPPLEMENT

This Chapter is not applicable as the ship is not a gas carrier

Chapter 17. COMBINATION CARRIER SUPPLEMENT

This Chapter is not applicable as the ship is not a combination carrier

Report for Prestige [IMO\LR Number: 7372141, Date: 13 Mar 2002, Port: Karachi, Pakistan]

Section 3.

Key Questions Marked Yes with Comments, No, Not Seen, Not Applicable and Additional Comments

The items shown in this Section will not be segregated but will follow the Key Question order in the VIQ Chapters. Where no Additional Comments are shown, this means that there are no Additional comments.

Chapter 2. CERTIFICATION AND DOCUMENTATION

2.1	Is vessel free of outstanding conditions of class or other conditions pertaining to statutory requirements?	(Y)	N	NS	NA

Comments:
All conditions of class cleared at the last drydock. No significant memoranda reported.

2.2	Are all statutory certificates valid?	(Y)	N	NS	NA

Comments:
All statutory cerificates valid 31 March 2006.

Additional Comments:
CLC valid 20 February 2003, insurer London Steamship P&I.
DOC issued 25 March 1998 by Bureau Veritas on behalf of flag state. Annual verification 23 May 2001
SMC issued 19 July 2001 by Bureau Veritas on behalf of flag state.
No FMC/TVEL as vessel no longer trading USA.

Certification was generally well presented and Master was able to find all documents requested by the inspector. All statutory certificates were valid and there were no conditions of class outstanding.All safety gear certificates were in date.

Chapter 3. CREW MANAGEMENT

3.2	Does actual manning meet Minimum Safe Manning Certificate requirements?	(Y)	N	NS	NA

Comments:
Safe manning requirement 7 officers, 7 ratings.
Actual manning 9 officers, 18 ratings.

3.3	Where a radio officer is not carried (as permitted by the vessel's flag State) are suitably certificated officers on board?	(Y)	N	NS	NA

Comments:
Deck officers hold GMDSS licences.

3.4	Are the crew able to communicate effectively with the officers in a common language?	(Y)	N	NS	NA

Comments:
Common language was English.

3.5	Does Company have a drug and alcohol policy meeting OCIMF guidelines?	(Y)	N	NS	NA

Comments:
Company policy is Zero tolerance for drugs and alcohol.

3.10	Does the Company provide a training policy exceeding statutory requirements?	(Y)	N	NS	NA

Comments:
Courses include Bridge management, bunkering procedures, Emergency response, Survival at Sea, videotel etc.

Report for Prestige [IMO\LR Number: 7372141, Date: 13 Mar 2002, Port: Karachi, Pakistan]

Additional Comments:
The Greek officers were directly employed by Operators.
The Filipino officers and ratings were employed through a manning agency in Manila, which was owned by Operators, who have full selection rights and maintain files on seafarers.

The officers were Greek/Filipino and the crew were Filipino.
Crew management was satisfactory ,with crew working as a team. The Master and Chief Engineer were experienced in tanker operations, but many of the junior officers were new to this Operator.

Chapter 4. NAVIGATION

4.5	Has a system been established to ensure that nautical publications, charts and information are on board and current?	(Y)	N	NS	NA

Comments:
Vessel has a contract with Kelvin Hughes for the supply of charts and publications.

Additional Comments:
All navigation equipment was reported to be in full working condition.
Navigation was satisfactory with frequent position fixing.
The passage plan was comprehensive.
Charts and publications were corrected up to NM 09/02.
The bridge was well equipped, reasonably clean and tidy.

The compass deviation card was dated 15 December 2001

Chapter 5. SAFETY MANAGEMENT

5.5	Are officers familiar with operation of fire fighting, life saving and other emergency equipment?	(Y)	N	NS	NA

Comments:
Emergency fire pump and steering gear tested during inspection. Crew familiar with operation.

	Are specified procedures utilised for hot work?	(Y)	N	NS	NA

Comments:
5.8.2. Welding cable in engine room workshop damaged and taped.

5.9	Does fire fighting equipment meet SOLAS requirements?	Y	(N)	NS	NA

Comments:
5.9.2 Fire hose in accomodation block, jet/spray nozzle found seized. Rectified during inspection.

5.11	Are fixed fire detection and alarm systems fully operational and tested regularly?	(Y)	N	NS	NA

Comments:
Fixed fire detection in engine room, pumproom and steering gear only. Fire patrols maintained throughout the vessel.

5.12	If a system to monitor flammable atmospheres in non-cargo spaces is fitted, are recorders, alarms and manufacturers test procedures in order?	Y	N	NS	(NA)

Comments:
No system to monitor flammable athmospheres in non-cargo spaces. Manual sampling only on daily basis.

Report for Prestige [IMO\LR Number: 7372141, Date: 13 Mar 2002, Port: Karachi, Pakistan]

5.15	Are relevant training and maintenance manuals for lifesaving appliances on board?	(Y)	N	NS	NA

Comments:
Ship specific.

5.16	Are all lifesaving appliances in good order?	Y	(N)	NS	NA

Comments:
5.16.1 Port lifeboat rudder (wood) partially split

Additional Comments:
Lifesaving and firefighting appliances were in a satisfactory condition apart from the port lifeboat rudder, which was partially split. Safety maintenance records appeared to be satisfactory.
Enclosed entry permits were being completed for tanks and pumproom.
Personal protective equipment was being worn and there were numerous safety notices posted throughout the vessel.
Designated smoking areas were clearly identified.

Chapter 6. POLLUTION PREVENTION

6.2	Is a USCG letter approving a Vessel Response Plan (VRP) on board, and are drills regularly held and recorded?	Y	N	NS	(NA)

Comments:
No VRP as vessel no longer trading USA.

6.5	Is there a working type approved oil discharge monitoring and control system on board?	(Y)	N	NS	NA

Comments:
Salwico ODME, reported to be in full working condition.

6.7	Are there adequate arrangements to prevent any oil spill entering the water?	(Y)	N	NS	NA

Comments:
Expanded rubber scupper plugs fitted. New manifold spill tray fitted at drydock.
SOPEP equipment deployed near manifold.

6.8	Is cargo sea chest valve testing arrangement in good order and regularly checked?	(Y)	N	NS	NA

Comments:
.on connection recently fitted.

	Is there an owner's environmental policy on board?	(Y)	N	NS	NA

Comments:
Policy covers prevention of unnecessary injuries, loss of life, damage to health, property and pollution of the environment.

6.10	Is the oily water separator control system and engine room bilge oily water separator/ filtering system in good working order?	(Y)	N	NS	NA

Comments:
Fitted with 3-way diverter. 15ppm alarm tested during inspection.

6.11	Are Oil Record Book parts 1 and 2 completed up to date?	(Y)	N	NS	NA

Comments:
Oil record books checked. Part 1 did not contain any bilge slop removal certificates (these were reportedly in another file).
There was no incinerator onboard.

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6.13	Is the vessel suitably equipped to meet requirements of MARPOL Annex IV?	(Y)	N	NS	NA

Comments:
Micropher sewage tratment plant fitted.

6.14	Is the vessel suitably equipped to meet the requirements of MARPOL Annex V?	(Y)	N	NS	NA

Comments:
No incinerator. Vessel has effective garbage management policy, however the garbage management log had not been fully completed, with only details of cat.5 garbage.There was no mention of how the other catagories were disposed of and no garbage disposal certificates attached to the log.

Additional Comments:
Pollution prevention awareness appeared to be good with equipment well deployed.
SOPEP drills were carried out regularly as per company instructions.
E/room bilges were pumped to the bilge holding tank whilst in special areas and reportedly discharged to reception facilities at regular intervals.

. . vessel has a ballast water management plan.

[redacted]apter 7. STRUCTURAL CONDITION

7.1	Is an Enhanced Survey Report File maintained on board?	(Y)	N	NS	NA

Comments:
Last condition evaluation report issued 14 June 2001 by ABS.

Tank	Protection	Condition
No.1-4C CCT	NP	N/A
No.1,2,4 P&S COT	NP	N/A
FPT	C	Fair
APT	C	Fair
No.2 P&S WBT	C	Fair
No.3 P&S WBT	NP	N/A

Thickness gauging report issued by D.Thomas Marine 19 May 2001. The following average diminutions were recorded:
Deck plates 1% to 11%
T :st tank stiffeners (2S)16% to 18%
" " (3S) 3% to 9%

[redacted]te.
More than 300 tons of steelwork was renewed at last drydock in China.
ABS reports vessel fit for intended purpose for the next 5 years subject to proper maintenance and operation and to periodic surveys being carried out at the due dates.

7.2	Were any cargo or ballast tanks inspected?	Y	N	(NS)	NA

Comments:
Due to terminal regulations it was not possible to inspect any tanks.

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Additional Comments:
There were no void spaces on this vessel.
Inspection of cargo tanks every 12 months
Inspection of ballast tanks every 6 months

According to Master, permanent ballast is now carried in FPT, 2w and 3w. No tank washing has been carried out since drydock, only COW.

Chapter 8. CARGO AND BALLAST SYSTEMS

8.10	Are pumproom gas detection and liquid alarms working?	(Y)	N	NS	NA

Comments:
Recently tested.

8.11	Are manifold back pressure gauges fitted and in working order and are they fitted outboard of manifold valves?	(Y)	N	NS	NA

Comments:
New gauges fitted at drydock.

8.13	Are all booms, derricks, cranes, cargo hoses and other equipment requiring periodic testing properly marked and has testing been conducted?	(Y)	N	NS	NA

Comments:
Last annual inspection 18 May 2001.

8.14	Does vessel use its own cargo hoses?	Y	(N)	NS	NA

Comments:
Vessel does no use its own hoses.

8.17	Is the vessel capable of operating in a closed condition?	(Y)	N	NS	NA

Comments:
Fixed gauging by float system, which was reported to be working but unreliable. UTI tapes used extensively during cargo operations. 6 units onboard, last calibrated 12 March 2002.
Vapour locks certified and calibrated by ABS.

8.18	Are ISGOTT guidelines regarding static hazards strictly adhered to?	Y	N	NS	(NA)

Comments:
Cargo tanks inerted.

	If fitted, are all cargo tank high level alarms in good working order?	(Y)	N	NS	NA

Comments:
95% & 98% independant alarms fitted.

8.21	Are portable gas/O2 analysers on board appropriate to the cargoes being carried and are they operational?	(Y)	N	NS	NA

Comments:
3 x combustible gas detectors
2 x oxygen analyzers
2 x tankscopes
1 x multigas detector
1 x toxic gas detector
1 x drager personal oxyalarm.

Instruments last calibrated 12 March 2002.

Report for Prestige [IMO\LR Number: 7372141, Date: 13 Mar 2002, Port: Karachi, Pakistan]

Additional Comments:
All cargo equipment was noted to be operational.
Gauging was carried out by portable UTI tapes.
Independent high level alarms were fitted.
Venting was by mast riser with individual breather valves fitted to the cargo tanks.
Pipelines, valves, vents and flame screens appeared to be in a satisfactory condition. All rusty lines were changed at last drydock.
Cargo documentation was satisfactory with comprehensive records and a clear, detailed cargo plan.

Chapter 9. INERT GAS AND CRUDE OIL WASHING SYSTEMS

9.7	Does I.G. non-return valve appear to be working?	(Y)	N	NS	NA

Comments:
Overhauled in drydock.

	If tanks can be individually isolated from the I.G. main, are there means to provide protection against over or under pressure?	(Y)	N	NS	NA

Comments:
Individual breather valves fitted to cargo tanks. Positive locking device fitted. Keys with Chief officer.

9.10	Is COW being carried out on this occasion?	(Y)	N	NS	NA

Comments:
Bottom wash only.

Additional Comments:
The inert gas system has been recently overhauled .
Oxygen levels in the tanks were noted to be less than 4%.
Inert gas lines, valves and couplings were in satisfactory condition.
The cow system was fixed and programmable. Reported to be in full working condition.

Chapter 10. MOORING

10.2	Is all mooring equipment in good condition?	Y	(N)	NS	NA

Comments:
10.2 Aft mooring winch clutch handle securing pin missing, replaced during inspection.

	Are anchors, cables and securing arrangements in good condition?	(Y)	N	NS	NA

Comments:
Lengths of anchor cable renewed at drydock. All mooring equipment was in satisfactory condition.

Additional Comments:
Mooring wires on drums were in good condition. Material of additional mooring ropes was polypropylene and synthetic tails was nylon. All ropes and wires had certificates, with breaking strains of 60.8 tons for mooring wires, 70.6 tons for mooring ropes and 94.4 tons for nylon tails. No elongation factors were available.

Windlass and winches were well greased. Load tests were carried out on 14 May 2001.
The anchor cable bitter end release was in full working condition.

Chapter 11. COMMUNICATIONS AND ELECTRONICS

11.5	Is a satisfactory maintenance programme for radio and electronic equipment in place?	(Y)	N	NS	NA

Comments:
Vessel has a contract with JRC for shore based maintenance.

Report for Prestige [IMO\LR Number: 7372141, Date: 13 Mar 2002, Port: Karachi, Pakistan]

Additional Comments:
The vessel was equipped and operated according to GMDSS.
All radio equipment was in full working condition.
The second officer was designated to be the GMDSS operator.

Chapter 12. ENGINE ROOM AND STEERING GEAR

12.3	Are hot surfaces free of any evidence of fuel/diesel/lub. oil impingement?	(Y)	N	NS	NA

Comments:
Double envelope fitted around hp injection pipes.

12.6	Are emergency power supplies fully operational?	(Y)	N	NS	NA

Comments:
Emergency batteries fitted.

12.8	In the case of UMS vessels, is alarm system fitted and is it regularly tested with results recorded?	Y	N	NS	(NA)

Comments:
Not UMS.

12.11	Are engine room, steering compartments and machinery clean and free from obvious leaks?	Y	(N)	NS	NA

Comments:
Minor luboil leaks from main engine and water leaks from no.1 seawater cooling pump.

Additional Comments:
The main engine and auxiliaries were reported to be fully operational.
The engine room was found to be generally clean, tidy and well painted, with minor oil leaks from main engine, and water leaks from pumps.
The steering gear was satisfactory with no hydraulic leaks noted.
The planned maintenance system was manual , covers all areas.
The pms is not class approved and vessel does not obtain cms credit from class.
Work planning meetings were held monthly.
There was no significant work backlog, and forward plan was available.

napter 13. GENERAL APPEARANCE AND CONDITION

13.1	Is general hull condition satisfactory?	(Y)	N	NS	NA

Comments:
Hull generally satisfactory. Isolated rust stains in way of overboard scuppers.

13.3	Are weather decks in satisfactory condition?	(Y)	N	NS	NA

Comments:
Accommodation decks were in good condition, recently painted. The maindeck, focsle and poop decks require cosmetic attention, particularly under the pipelines. Operators are reportedly attending to this.
Deck fittings were in fair condition but pipeline supports, u-brackets, flanges etc. will require attention in future.

13.4	Is deck piping in satisfactory condition?	Y	(N)	NS	NA

Comments:
Pipelines were generally spot rusted. Maintenance currently in progress. No significant corrosion or patches.
13.4.8. Minor stean leaks on deck.

Report for Prestige [IMO\LR Number: 7372141, Date: 13 Mar 2002, Port: Karachi, Pakistan]

13.6	Is accommodation clean and tidy?	Y	(N)	NS	NA
Comments: Accomodation looking rather 'tired' and untidy in places.					

13.7	Are pumproom spaces clean and tidy?	(Y)	N	NS	NA
Comments: The pumproom was clean, tidy and well painted. Bilges were dry.					

13.10	Are vents and air pipes on freeboard deck in good condition and fitted with closing devices to prevent ingress of water?	Y	(N)	NS	NA
Comments: Sounding pipe caps in focsle left off.					

Additional Comments:
hull condition was satisfactory.
maindeck condition was generally satisfactory, needs attention in places.
The focsle condition was satisfactory, needs attention in places.
The poop needs attention to deck plating.
The accommodation and storerooms were satisfactory.
The engine room was generally clean,tidy and well painted .

Chapter 14. SHIP TO SHIP TRANSFER SUPPLEMENT

Additional Comments:
No additional comments.

Chapter 15. CHEMICAL CARRIER SUPPLEMENT

This Chapter is not applicable as the ship is not a chemical carrier

Chapter 16. GAS CARRIER SUPPLEMENT

This Chapter is not applicable as the ship is not a gas carrier

Chapter 17. COMBINATION CARRIER SUPPLEMENT

This Chapter is not applicable as the ship is not a combination carrier

APPENDIX H

Loading Conditions

- Departure Ventspils
- Departure Kerteminde
- Intact loaded condition on 13 November 2002
- Damaged condition
- Damaged Condition 2 Port after wing tank and 3 Port wing tank filled

LOADING CONDITIONS

NAME OF SHIP : M/T PRESTIGE

CALL SIGN : C6MN6

PORT OF REGISTRY : NASSAU

REVISION	DESCRIPTION	DATE	BY

Prepared for/and on behalf of ELKCO Marine Consultants LTD–LIBERIA

ELKCO MARINE CONSULTANTS
79 AKTI MIAOULI & 1, KANARI ST., PIRAEUS–GREECE TEL:2104528200, FAX: 2104526260

	NAME	DATE	SHIP'S NAME: M/T PRESTIGE
DESIGNED/DRAWN BY	G.P.		
CHECKED BY	K.M.		COMPANY NAME: UNIVERSE MARITIME LTD.
APPROVED BY			

SCALE: ~	PROJECT No.: 03007 XM	DRAWING/DOCUMENT TITLE : LOADING CONDITIONS	DWG. No. ~
REV. 00			SHEET 1 OF ~

M/T PRESTIGE

LOADING CONDITIONS

*** DEPARTURE : VENSPILS (05/11/2002)**

*** DEPARTURE : KERTEMINTE (07/11/2002)**

*** 13/11/2002 : INTACT CONDITION**

*** 13/11/2002 : DAMAGED CONDITION**

*** ADJUST HEEL BY No2WBT(P) AND No3CBT(P)**

* DEPARTURE : VENSPILS (05/11/2002)

M/T PRESTIGE DEP:VENSPILS-05/11/2002.... PAGE :

LIQUID CARGO IN TANKS

COMPARTMENT NAME	FRAME AFT	FRAME FOR	LOAD No	DENS60 MT/m3	VOLUME (m3)	FIL %	TEMP °F	WEIGHT (MT)	LCG Mid(m)	VCG (m)	FSM (MT*m)
No1 Center COT (C)	81	91	2	0.9906	7093	58	129	6841	78.05	5.60	11911
No2 Center COT (C)	71	81	2	0.9906	12170	99	123	11767	36.05	9.56	11941
No3 Center COT (C)	61	71	2	0.9906	12219	99	122	11819	-6.15	9.60	11945
No4 Center COT (C)	51	61	2	0.9906	12342	99	126	11920	-48.57	9.60	12171
No1 Wing COT (P)	81	91	2	0.9906	6789	96	108	6603	77.12	9.46	2847
No1 Wing COT (S)	81	91	2	0.9906	6933	98	120	6710	77.12	9.65	2833
No2 Wing COT (P)	76	81	2	0.9906	3713	98	124	3588	46.60	9.38	1504
No2 Wing COT (S)	76	81	2	0.9906	3758	99	113	3648	46.60	9.49	1510
No3 Wing COT (P)	61	71									
No3 Wing COT (S)	61	71									
No4 Wing COT (P)	54	61	2	0.9906	5230	99	122	5059	-41.97	9.60	2107
No4 Wing COT (S)	54	61	2	0.9906	5237	100	122	5065	-41.97	9.61	2107
Slop Tank (P)	51	54	2	0.9906	2050	100	126	1980	-63.02	10.13	860
Slop Tank (S)	51	54	2	0.9906	2040	99	126	1970	-63.02	10.08	860
T O T A L S					79573			76971	12.95	9.24	62595

LIQUID CARGO PER LOAD TYPE

NOTE: [Pd] : Product ASTM-IP Tables

LOAD No	Description	API 60°F	SG 60°F	SG 15°C	MT/m3 60°F	MT/m3 15°C	LOADED (MT)	(Bls)	Bls 60F
2	[Pd] FUEL OIL -	11.0	0.9927	0.9931	0.9906	0.9910	76971	500500	487298

Ballast Density = 1.025 MT/m3

COMPARTMENT NAME	FRAME AFT	FRAME FOR	CAPACITY (m3)	FILL %	WEIGHT (MT)	LCG Mid (m)	VCG (m)	FSM (MT*m)
Fore Peak Tank	93	115	3140.1					
No2 Clean B.Tk (P)	71	76	3791.1					
No2 Clean B.Tk (S)	71	76	3791.1					
Aft Peak Tank (C)	-8	11	506.6	100	519.3	-112.870	13.86	0
T O T A L S			11229.0		519.3	-112.870	13.86	0

Fuel Density = .930 MT/m3

COMPARTMENT NAME	FRAME AFT	FRAME FOR	CAPACITY (m3)	FILL %	WEIGHT (MT)	LCG Mid (m)	VCG (m)	FSM (MT*m)
Fore F.O.T. (P)	92	93	818.4					
Fore F.O.T. (S)	92	93	660.2					
Aft F.O.T. (P)	36	50	1234.1	14	159.0	-76.520	3.16	458
Aft F.O.T. (S)	36	50	1486.6	12	159.0	-77.390	3.06	668
T O T A L S			4199.3		318.0	-76.955	3.11	1126

ANKO - MARINE LOAD PLANNER

M/T PRESTIGE DEP:VENSPILS-05/11/2002.... PAGE :

Diesel Density = .835 MT/m3

COMPARTMENT NAME	FRAME AFT	FRAME FOR	CAPACITY (m3)	FILL %	WEIGHT (MT)	LCG Mid (m)	VCG (m)	FSM (MT*m)
Diesel Oil Tank(P)	34	44	162.8	19	26.4	-82.170	0.24	559
Diesel Oil Tank(S)	32	44	185.0	17	26.4	-83.030	0.21	623
T O T A L S			347.8		52.9	-82.600	0.23	1182

Fresh Water Density = 1.000 MT/m3

COMPARTMENT NAME	FRAME AFT	FRAME FOR	CAPACITY (m3)	FILL %	WEIGHT (MT)	LCG Mid (m)	VCG (m)	FSM (MT*m)
No1 Fresh W.Tk (P)	11	20	103.3	49	51.0	-103.330	16.90	106
No2 Fresh W.Tk (P)	11	14	81.2	50	40.6	-106.370	13.37	250
No2 Fresh W.Tk (S)	11	14	81.2	50	40.6	-106.370	13.37	250
No3 Fresh W.Tk (P)	7	11	89.0	50	44.5	-109.220	16.83	245
No3 Fresh W.Tk (S)	7	11	60.0	50	30.0	-109.210	16.86	103
Distil.Water Tk(S)	11	20	103.3	90	93.0	-103.330	17.53	106
T O T A L S			518.0		299.7	-105.617	16.12	1060

CONSTANTS

Ref No	DESCRIPTION OF LOADED WEIGHT	FRAME AFT	FRAME FOR	LENGTH (m)	WEIGHT (MT)	VCG(BL) (m)	LCG Mid (m)	TCG (m)
1.	Crew & Effects	20	41	19.30	5.0	22.60	-90.00	0.00
2.	Store	64	70	23.58	70.0	18.80	-3.00	0.00
3.	Cooling Water Tank	7	12	4.16	26.0	4.90	-108.67	0.00
4.	Oil & Water in E/R	30	41	9.98	272.0	14.14	-85.66	0.00
5.	Spare Shaft & Prop.	52	53	4.88	44.0	14.21	-62.99	0.00
6.	Anodes	64	67	14.04	47.0	3.89	-7.77	0.00
	T O T A L S				464.0	13.38	-64.49	0.00

ANKO - MARINE LOAD PLANNER

M/T PRESTIGE DEP:VENSPILS-05/11/2002.... PAGE :

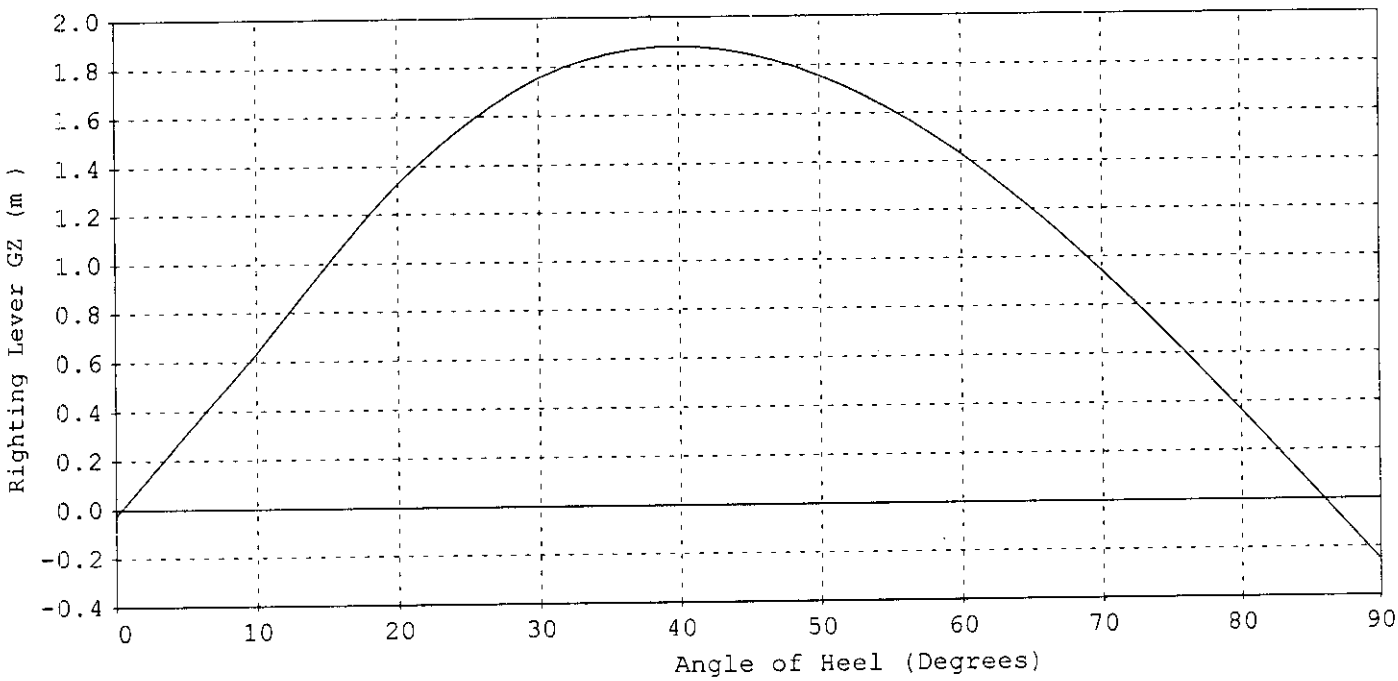
INTACT STABILITY ANALYSIS Sea Density : 1.0250 MT/m3

ITEMS	Weight MT	VCG m	LCG m	FSM MT-m
LightShip	15164	11.19	-14.66	0
Constants	464	13.38	-64.49	0
Cargo	76971	9.24	12.95	62595
Ballast	519	13.86	-112.87	0
Fresh Water	300	16.12	-105.62	1060
Fuel Oil	318	3.11	-76.96	1126
Diesel Oil	53	0.23	-82.60	1182
Lub Oil	0	0.00	0.00	0
Stores	0	0.00	0.00	0
Deadweight	78625	9.29	10.78	65964
TOTALS	93789	9.60	6.67	65964

HYDROSTATICS		
Draft FPP	13.52	m
Mk	13.53	m
APP	13.80	m
Mk	13.79	m
Mid	13.66	m
Mk	13.66	m
LCF	13.66	m
TRIM	0.27	m
HEEL	0.4	Deg
LCF	2.07	m
Prop Tip	-6.19	m
TPC-I	73.47	MT/cm
MCT	1258.6	MT-m/cm
MCH	6093	MT-m/deg
FLood	44.7	Deg
LCB	7.03	m
KM(T)	14.02	m
KG	9.60	m
GM	4.43	m
GGo	0.70	m
GoM	3.72	m
KG(eff)	10.30	m

STABILITY CRITERIA

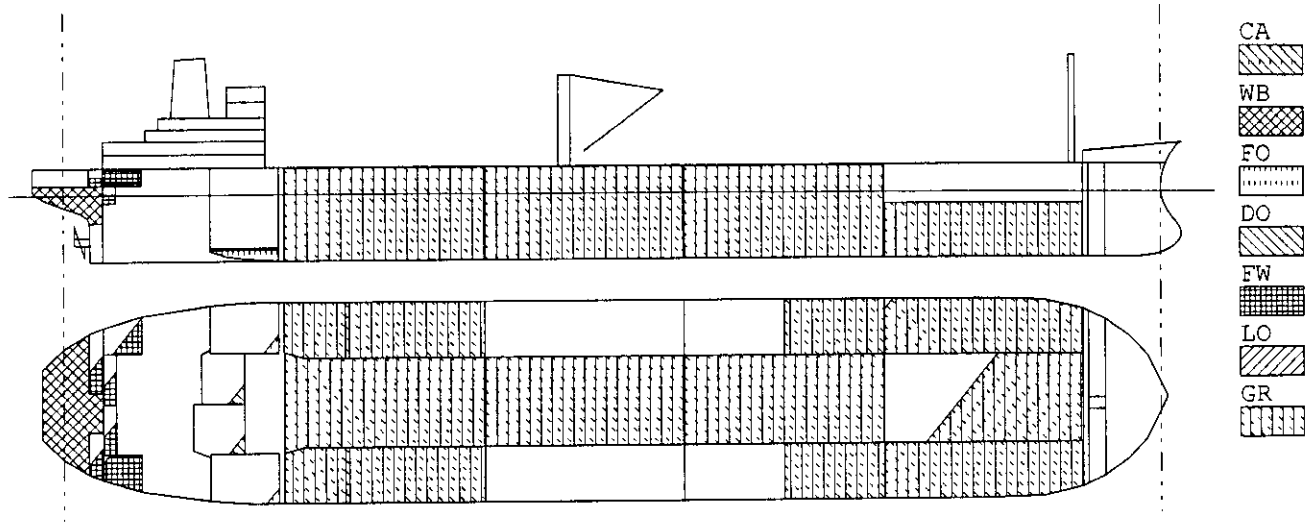
Criterion		Actual		Limit	
Area 0°- 30°	m x RAD	0.4997	>=	0.055	OK
Area 0°- 40.0°	m x RAD	0.821	>=	0.09	OK
Area 30°- 40.0°	m x RAD	0.3213	>=	0.03	OK
GZ at 30°	m	1.757	>=	0.2	OK
Max GZ Angle	Deg	39.64	>=	25.0	OK
Maximum GZ	1.88 m				
Initial GM	m	3.722	>=	0.15	OK

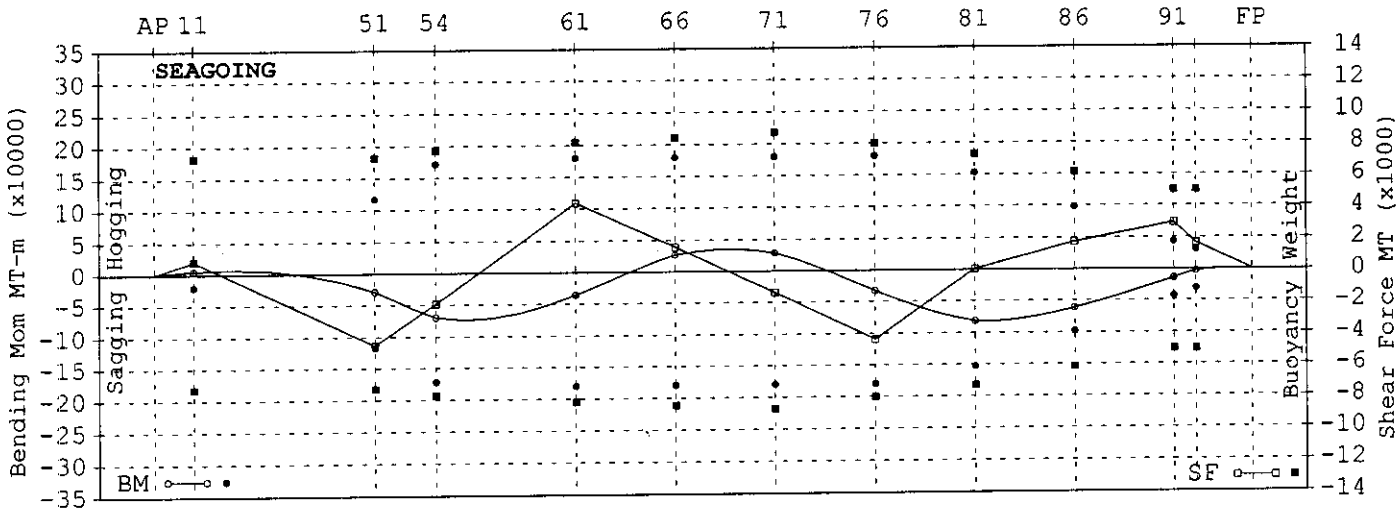


Angle (Deg)	0.00	5.00	10.00	20.00	30.00	45.00	60.00	75.00	90.00
GZ (m)	-0.03	0.31	0.64	1.33	1.76	1.85	1.43	0.66	-0.25

ANKO - MARINE LOAD PLANNER

M/T PRESTIGE DEP:VENSPILS-05/11/2002.... PAGE :





FRAME	SHEAR FORCE			BENDING MOMENT SEAGOING				
					Hogging		Sagging	
No	Actual (MT)	Percent %	Limit (MT)	Actual (MT-m)	Percent %	Limit (MT-m)	Percent %	Limit (MT-m)
11	805	11	7300	5103	25	20825	-	-20825
51	-4541	62	-7300	-28455	-	117000	24	-117000
54	-1932	25	-7750	-69950	-	172000	41	-172000
61	4358	53	8200	-35800	-	180000	20	-180000
66	1575	19	8450	26421	15	180000	-	-180000
71	-1369	16	-8700	28527	16	180000	-	-180000
76	-4361	55	-8000	-32537	-	180000	18	-180000
81	44	1	7300	-81714	-	153000	53	-153000
86	1720	28	6150	-61133	-	98000	62	-98000
91	2930	59	5000	-14639	-	43000	34	-43000
93	1640	33	5000	-3711	-	30751	12	-30751

SF max -4541 (MT) (Excess Buoyancy) at Frame 51 62% of Max Perm
BM max -82072 (MT-m) (Sagging) at Frame 82 56% of Max Perm
Estimated Deflection Amidships = -2 cm SAGGING

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* DEPARTURE : KERTEMINTE (07/11/2002)

M/T PRESTIGE DEP:KERTEMINTE,7/11/2002... PAGE :

LIQUID CARGO IN TANKS

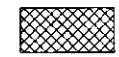
COMPARTMENT NAME	FRAME AFT	FRAME FOR	LOAD No	DENS60 MT/m3	VOLUME (m3)	FIL %	TEMP °F	WEIGHT (MT)	LCG Mid(m)	VCG (m)	FSM (MT*m)
No1 Center COT (C)	81	91	2	0.9906	7093	58	129	6841	78.05	5.60	11911
No2 Center COT (C)	71	81	2	0.9906	12170	99	123	11767	36.05	9.56	11941
No3 Center COT (C)	61	71	2	0.9906	12219	99	122	11819	-6.15	9.60	11945
No4 Center COT (C)	51	61	2	0.9906	12342	99	126	11920	-48.57	9.60	12171
No1 Wing COT (P)	81	91	2	0.9906	6789	96	108	6603	77.12	9.46	2847
No1 Wing COT (S)	81	91	2	0.9906	6933	98	120	6710	77.12	9.65	2833
No2 Wing COT (P)	76	81	2	0.9906	3713	98	124	3588	46.60	9.38	1504
No2 Wing COT (S)	76	81	2	0.9906	3758	99	113	3648	46.60	9.49	1510
No3 Wing COT (P)	61	71									
No3 Wing COT (S)	61	71									
No4 Wing COT (P)	54	61	2	0.9906	5230	99	122	5059	-41.97	9.60	2107
No4 Wing COT (S)	54	61	2	0.9906	5237	100	122	5065	-41.97	9.61	2107
Slop Tank (P)	51	54	2	0.9906	2050	100	126	1980	-63.02	10.13	860
Slop Tank (S)	51	54	2	0.9906	2040	99	126	1970	-63.02	10.08	860
T O T A L S					79573			76971	12.95	9.24	62595

LIQUID CARGO PER LOAD TYPE

NOTE: [Pd] : Product ASTM-IP Tables

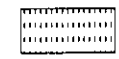
LOAD No	Description	API 60°F	SG 60°F	SG 15°C	MT/m3 60°F	MT/m3 15°C	(MT)	LOADED (Bls)	Bls 60F
2	[Pd] FUEL OIL -	11.0	0.9927	0.9931	0.9906	0.9910	76971	500500	487298

Ballast Density = 1.025 MT/m3



COMPARTMENT NAME	FRAME AFT	FRAME FOR	CAPACITY (m3)	FILL %	WEIGHT (MT)	LCG Mid (m)	VCG (m)	FSM (MT*m)
Fore Peak Tank	93	115	3140.1					
No2 Clean B.Tk (P)	71	76	3791.1					
No2 Clean B.Tk (S)	71	76	3791.1					
Aft Peak Tank (C)	-8	11	506.6					
T O T A L S			11229.0					

Fuel Density = .930 MT/m3



COMPARTMENT NAME	FRAME AFT	FRAME FOR	CAPACITY (m3)	FILL %	WEIGHT (MT)	LCG Mid (m)	VCG (m)	FSM (MT*m)
Fore F.O.T. (P)	92	93	818.4					
Fore F.O.T. (S)	92	93	660.2					
Aft F.O.T. (P)	36	50	1234.1	51	586.0	-76.520	6.84	458
Aft F.O.T. (S)	36	50	1486.6	42	586.0	-77.390	6.69	668
T O T A L S			4199.3		1172.0	-76.955	6.77	1126

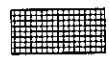
ANKO - MARINE LOAD PLANNER

M/T PRESTIGE DEP:KERTEMINTE,7/11/2002... PAGE :

Diesel Density = .835 MT/m3

COMPARTMENT NAME	FRAME AFT	FRAME FOR	CAPACITY (m3)	FILL %	WEIGHT (MT)	LCG Mid (m)	VCG (m)	FSM (MT*m)
Diesel Oil Tank(P)	34	44	162.8	16	21.9	-82.170	0.20	559
Diesel Oil Tank(S)	32	44	185.0	14	21.9	-83.030	0.18	623
T O T A L S			347.8		43.8	-82.600	0.19	1182

Fresh Water Density = 1.000 MT/m3



COMPARTMENT NAME	FRAME AFT	FRAME FOR	CAPACITY (m3)	FILL %	WEIGHT (MT)	LCG Mid (m)	VCG (m)	FSM (MT*m)
No1 Fresh W.Tk (P)	11	20	103.3	50	51.7	-103.330	16.91	106
No2 Fresh W.Tk (P)	11	14	81.2	50	40.6	-106.370	13.37	250
No2 Fresh W.Tk (S)	11	14	81.2	50	40.6	-106.370	13.37	250
No3 Fresh W.Tk (P)	7	11	89.0	50	44.5	-109.220	16.83	245
No3 Fresh W.Tk (S)	7	11	60.0	50	30.0	-109.210	16.86	103
Distil.Water Tk(S)	11	20	103.3	80	82.3	-103.330	17.37	106
T O T A L S			518.0		289.7	-105.696	16.03	1060

CONSTANTS

Ref No	DESCRIPTION OF LOADED WEIGHT	FRAME AFT	FRAME FOR	LENGTH (m)	WEIGHT (MT)	VCG(BL) (m)	LCG Mid (m)	TCG (m)
1.	Crew & Effects	20	41	19.30	5.0	22.60	-90.00	0.00
2.	Store	64	70	23.58	70.0	18.80	-3.00	0.00
3.	Cooling Water Tank	7	12	4.16	26.0	4.90	-108.67	0.00
4.	Oil & Water in E/R	30	41	9.98	272.0	14.14	-85.66	0.00
5.	Spare Shaft & Prop.	52	53	4.88	44.0	14.21	-62.99	0.00
6.	Anodes	64	67	14.04	47.0	3.89	-7.77	0.00
	T O T A L S				464.0	13.38	-64.49	0.00

ANKO - MARINE LOAD PLANNER

M/T PRESTIGE DEP:KERTEMINTE,7/11/2002... PAGE :

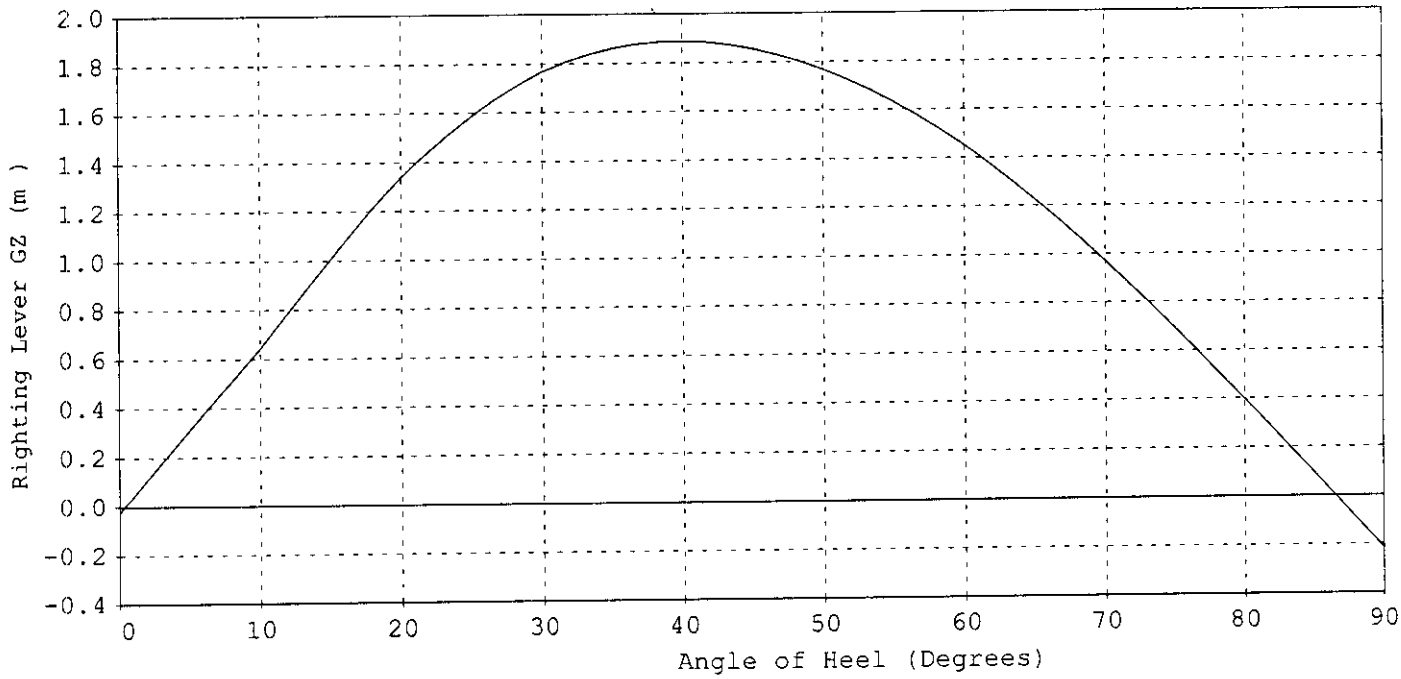
INTACT STABILITY ANALYSIS Sea Density : 1.0250 MT/m3

ITEMS	Weight MT	VCG m	LCG m	FSM MT-m
LightShip	15164	11.19	-14.66	0
Constants	464	13.38	-64.49	0
Cargo	76971	9.24	12.95	62595
Ballast	0	0.00	0.00	0
Fresh Water	290	16.03	-105.70	1060
Fuel Oil	1172	6.77	-76.96	1126
Diesel Oil	44	0.19	-82.60	1182
Lub Oil	0	0.00	0.00	0
Stores	0	0.00	0.00	0
Deadweight	78941	9.25	10.67	65964
TOTALS	94105	9.56	6.59	65964

HYDROSTATICS		
Draft FPP	13.54	m
Mk	13.55	m
APP	13.86	m
Mk	13.85	m
Mid	13.70	m
Mk	13.70	m
LCF	13.70	m
TRIM	0.32	m
HEEL	0.4	Deg
LCF	2.02	m
Prop Tip	-6.26	m
TPC-I	73.51	MT/cm
MCT	1260.5	MT-m/cm
MCH	6182	MT-m/deg
FLood	44.6	Deg
LCB	7.01	m
KM(T)	14.03	m
KG	9.56	m
GM	4.46	m
GGo	0.70	m
GoM	3.76	m
KG(eff)	10.26	m

STABILITY CRITERIA

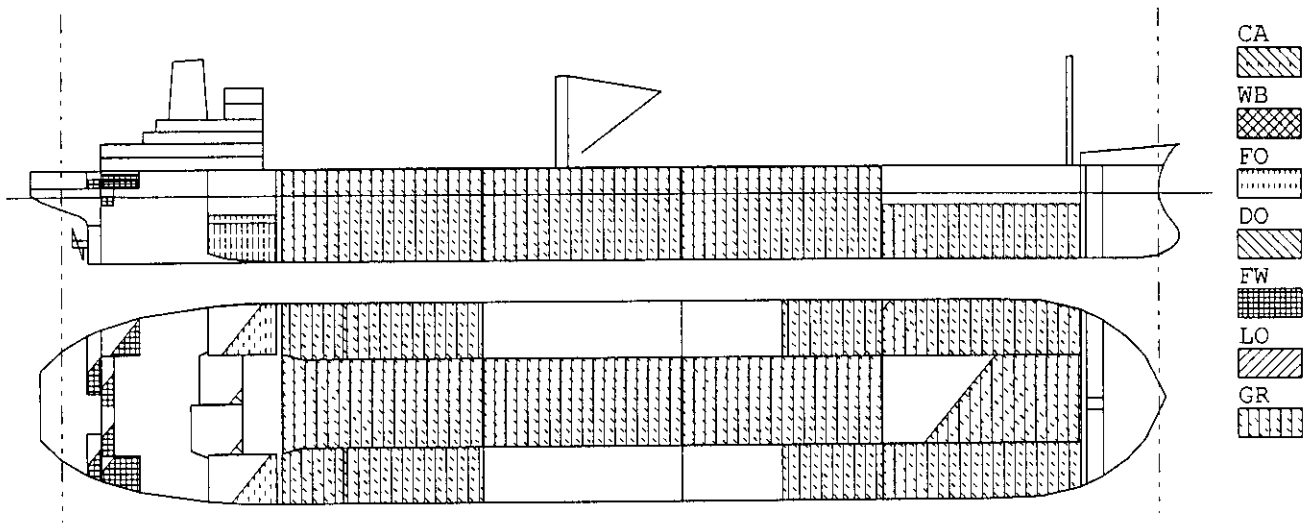
Criterion		Actual		Limit	
Area 0°- 30°	m x RAD	0.5044	>=	0.055	OK
Area 0°- 40.0°	m x RAD	0.8273	>=	0.09	OK
Area 30°- 40.0°	m x RAD	0.3228	>=	0.03	OK
GZ at 30°	m	1.767	>=	0.2	OK
Max GZ Angle	Deg	39.619	>=	25.0	OK
Maximum GZ	1.89 m				
Initial GM	m	3.764	>=	0.15	OK

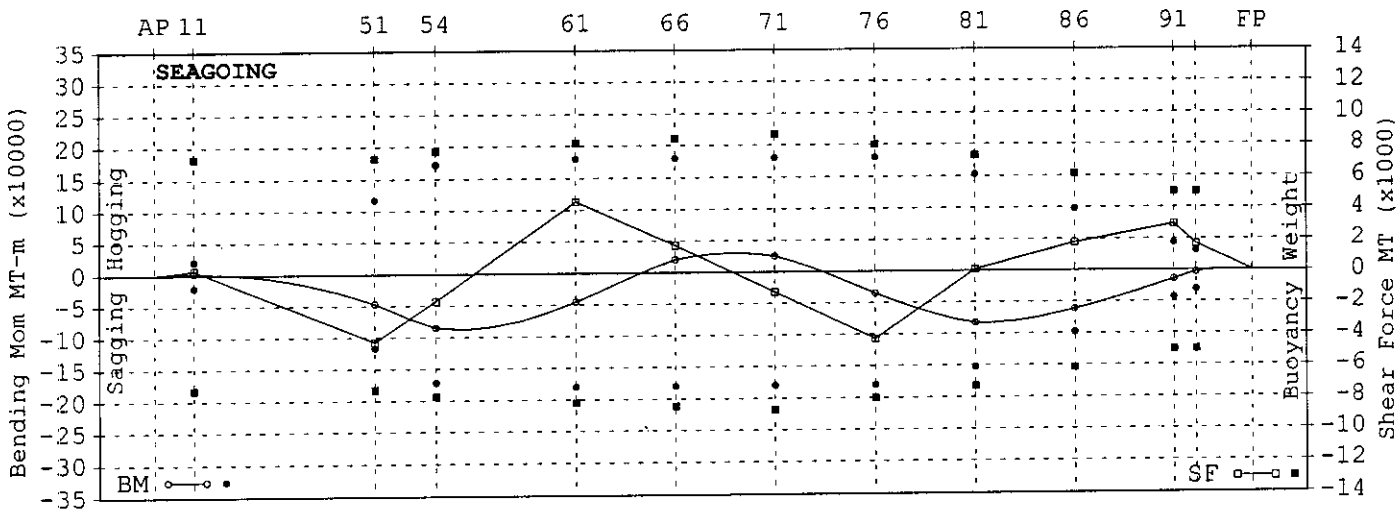


Angle (Deg)	0.00	5.00	10.00	20.00	30.00	45.00	60.00	75.00	90.00
GZ (m)	-0.02	0.31	0.64	1.34	1.77	1.85	1.45	0.69	-0.21

ANKO - MARINE LOAD PLANNER

M/T PRESTIGE DEP:KERTEMINTE,7/11/2002... PAGE :





FRAME No	SHEAR FORCE Actual (MT)	Percent %	Limit (MT)	BENDING MOMENT SEAGOING Hogging Actual (MT-m)	Percent %	Limit (MT-m)	Sagging Percent %	Limit (MT-m)
11	277	4	7300	2402	12	20825	-	-20825
51	-4297	59	-7300	-46551	-	117000	40	-117000
54	-1712	22	-7750	-85111	-	172000	49	-172000
61	4523	55	8200	-45299	-	180000	25	-180000
66	1706	20	8450	20031	11	180000	-	-180000
71	-1270	15	-8700	24547	14	180000	-	-180000
76	-4290	54	-8000	-34737	-	180000	19	-180000
81	90	1	7300	-82693	-	153000	54	-153000
86	1744	28	6150	-61380	-	98000	63	-98000
91	2937	59	5000	-14571	-	43000	34	-43000
93	1644	33	5000	-3618	-	30751	12	-30751

SF max -4297 (MT) (Excess Buoyancy) at Frame 51 59% of Max Perm
BM max -87829 (MT-m) (Sagging) at Frame 55 51% of Max Perm
Estimated Deflection Amidships = -3 cm SAGGING

ANKO - MARINE LOAD PLANNER

* 13/11/2002 : INTACT CONDITION

M/T PRESTIGE INTACT/DATE:13/11/2002..... PAGE :

LIQUID CARGO IN TANKS

COMPARTMENT NAME	FRAME AFT	FRAME FOR	LOAD No	DENS60 MT/m3	VOLUME (m3)	FIL %	TEMP °F	WEIGHT (MT)	LCG Mid(m)	VCG (m)	FSM (MT*m)
No1 Center COT (C)	81	91	2	0.9906	7093	58	129	6841	78.05	5.60	11911
No2 Center COT (C)	71	81	2	0.9906	12170	99	123	11767	36.05	9.56	11941
No3 Center COT (C)	61	71	2	0.9906	12219	99	122	11819	-6.15	9.60	11945
No4 Center COT (C)	51	61	2	0.9906	12342	99	126	11920	-48.57	9.60	12171
No1 Wing COT (P)	81	91	2	0.9906	6789	96	108	6603	77.12	9.46	2847
No1 Wing COT (S)	81	91	2	0.9906	6933	98	120	6710	77.12	9.65	2833
No2 Wing COT (P)	76	81	2	0.9906	3713	98	124	3588	46.60	9.38	1504
No2 Wing COT (S)	76	81	2	0.9906	3758	99	113	3648	46.60	9.49	1510
No3 Wing COT (P)	61	71									
No3 Wing COT (S)	61	71									
No4 Wing COT (P)	54	61	2	0.9906	5230	99	122	5059	-41.97	9.60	2107
No4 Wing COT (S)	54	61	2	0.9906	5237	100	122	5065	-41.97	9.61	2107
Slop Tank (P)	51	54	2	0.9906	2050	100	126	1980	-63.02	10.13	860
Slop Tank (S)	51	54	2	0.9906	2040	99	126	1970	-63.02	10.08	860
T O T A L S					79573			76971	12.95	9.24	62595

LIQUID CARGO PER LOAD TYPE

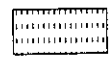
NOTE: [Pd] : Product ASTM-IP Tables

LOAD No	Description	API 60°F	SG 60°F	SG 15°C	MT/m3 60°F	MT/m3 15°C	(MT)	LOADED (Bls)	Bls 60F
2	[Pd] FUEL OIL -	11.0	0.9927	0.9931	0.9906	0.9910	76971	500500	487298

Ballast Density = 1.025 MT/m3

COMPARTMENT NAME	FRAME AFT	FRAME FOR	CAPACITY (m3)	FILL %	WEIGHT (MT)	LCG Mid (m)	VCG (m)	FSM (MT*m)
Fore Peak Tank	93	115	3140.1					
No2 Clean B.Tk (P)	71	76	3791.1					
No2 Clean B.Tk (S)	71	76	3791.1					
Aft Peak Tank (C)	-8	11	506.6					
T O T A L S			11229.0					

Fuel Density = .930 MT/m3



COMPARTMENT NAME	FRAME AFT	FRAME FOR	CAPACITY (m3)	FILL %	WEIGHT (MT)	LCG Mid (m)	VCG (m)	FSM (MT*m)
Fore F.O.T. (P)	92	93	818.4					
Fore F.O.T. (S)	92	93	660.2					
Aft F.O.T. (P)	36	50	1234.1	37	424.0	-76.520	5.61	458
Aft F.O.T. (S)	36	50	1486.6	31	424.0	-77.390	5.47	668
T O T A L S			4199.3		848.0	-76.955	5.54	1126

ANKO - MARINE LOAD PLANNER

M/T PRESTIGE INTACT/DATE:13/11/2002..... PAGE :

Diesel Density = .835 MT/m3

COMPARTMENT NAME	FRAME AFT	FRAME FOR	CAPACITY (m3)	FILL %	WEIGHT (MT)	LCG Mid (m)	VCG (m)	FSM (MT*m)
Diesel Oil Tank(P)	34	44	162.8	14	18.5	-82.170	0.17	559
Diesel Oil Tank(S)	32	44	185.0	12	18.5	-83.030	0.15	623
T O T A L S			347.8		37.0	-82.600	0.16	1182

Fresh Water Density = 1.000 MT/m3

COMPARTMENT NAME	FRAME AFT	FRAME FOR	CAPACITY (m3)	FILL %	WEIGHT (MT)	LCG Mid (m)	VCG (m)	FSM (MT*m)
No1 Fresh W.Tk (P)	11	20	103.3	50	51.7	-103.330	16.91	106
No2 Fresh W.Tk (P)	11	14	81.2	50	40.6	-106.370	13.37	250
No2 Fresh W.Tk (S)	11	14	81.2	38	31.0	-106.370	13.13	250
No3 Fresh W.Tk (P)	7	11	89.0	50	44.5	-109.220	16.83	245
No3 Fresh W.Tk (S)	7	11	60.0	50	30.0	-109.210	16.86	103
Distil.Water Tk(S)	11	20	103.3	80	82.3	-103.330	17.37	106
T O T A L S			518.0		280.1	-105.672	16.10	1060

CONSTANTS

Ref No	DESCRIPTION OF LOADED WEIGHT	FRAME AFT	FRAME FOR	LENGTH (m)	WEIGHT (MT)	VCG(BL) (m)	LCG Mid (m)	TCG (m)
1.	Crew & Effects	20	41	19.30	5.0	22.60	-90.00	0.00
2.	Store	64	70	23.58	70.0	18.80	-3.00	0.00
3.	Cooling Water Tank	7	12	4.16	26.0	4.90	-108.67	0.00
4.	Oil & Water in E/R	30	41	9.98	272.0	14.14	-85.66	0.00
5.	Spare Shaft & Prop.	52	53	4.88	44.0	14.21	-62.99	0.00
6.	Anodes	64	67	14.04	47.0	3.89	-7.77	0.00
	T O T A L S				464.0	13.38	-64.49	0.00

ANKO - MARINE LOAD PLANNER

M/T PRESTIGE INTACT/DATE:13/11/2002..... PAGE :

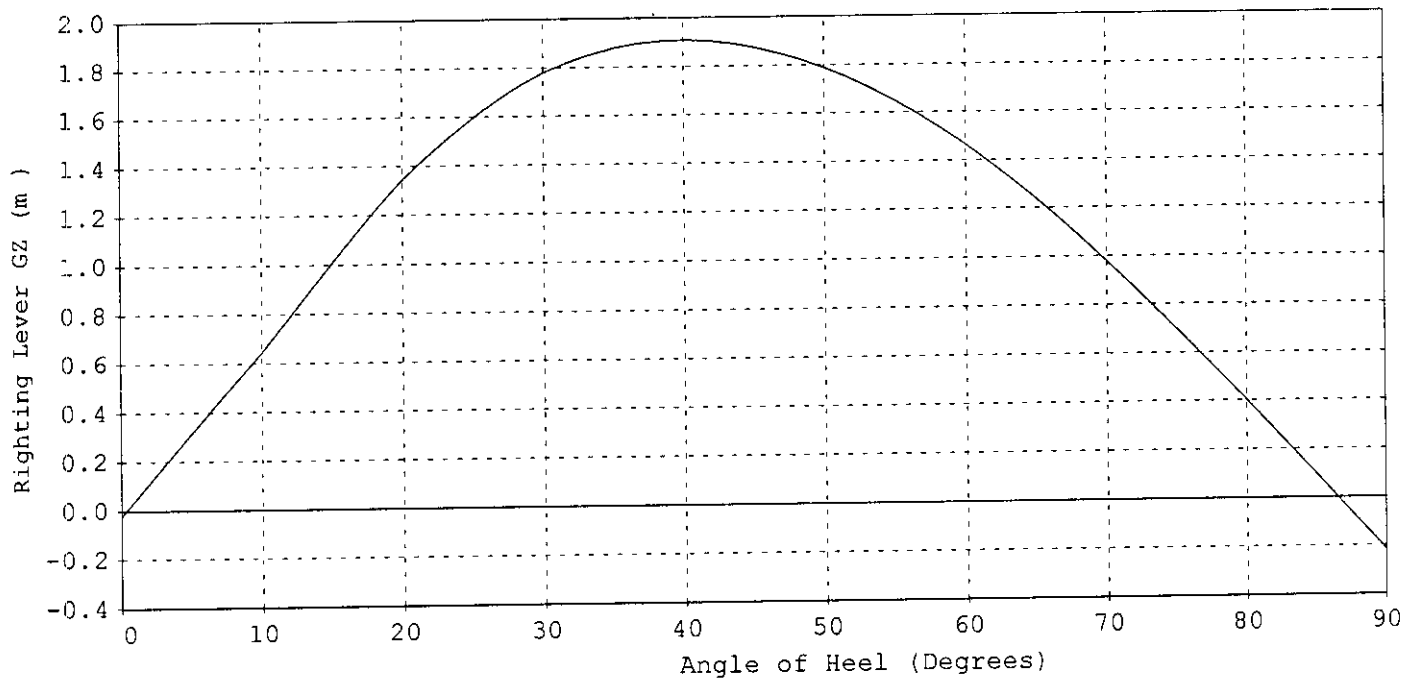
INTACT STABILITY ANALYSIS Sea Density : 1.0250 MT/m3

ITEMS	Weight MT	VCG m	LCG m	FSM MT-m
LightShip	15164	11.19	-14.66	0
Constants	464	13.38	-64.49	0
Cargo	76971	9.24	12.95	62595
Ballast	0	0.00	0.00	0
Fresh Water	280	16.10	-105.67	1060
Fuel Oil	848	5.54	-76.96	1126
Diesel Oil	37	0.16	-82.60	1182
Lub Oil	0	0.00	0.00	0
Stores	0	0.00	0.00	0
Deadweight	78600	9.24	11.05	65964
TOTALS	93764	9.56	6.89	65964

HYDROSTATICS	
Draft FPP	13.60 m
Mk	13.60 m
APP	13.71 m
Mk	13.70 m
Mid	13.65 m
Mk	13.66 m
LCF	13.65 m
TRIM	0.10 m
HEEL	0.3 Deg
LCF	2.07 m
Prop Tip	-6.10 m
TPC-I	73.47 MT/cm
MCT	1258.5 MT-m/cm
MCH	6154 MT-m/deg
FLood	44.7 Deg
LCB	7.03 m
KM(T)	14.02 m
KG	9.56 m
GM	4.46 m
GGo	0.70 m
GoM	3.76 m
KG(eff)	10.26 m

STABILITY CRITERIA

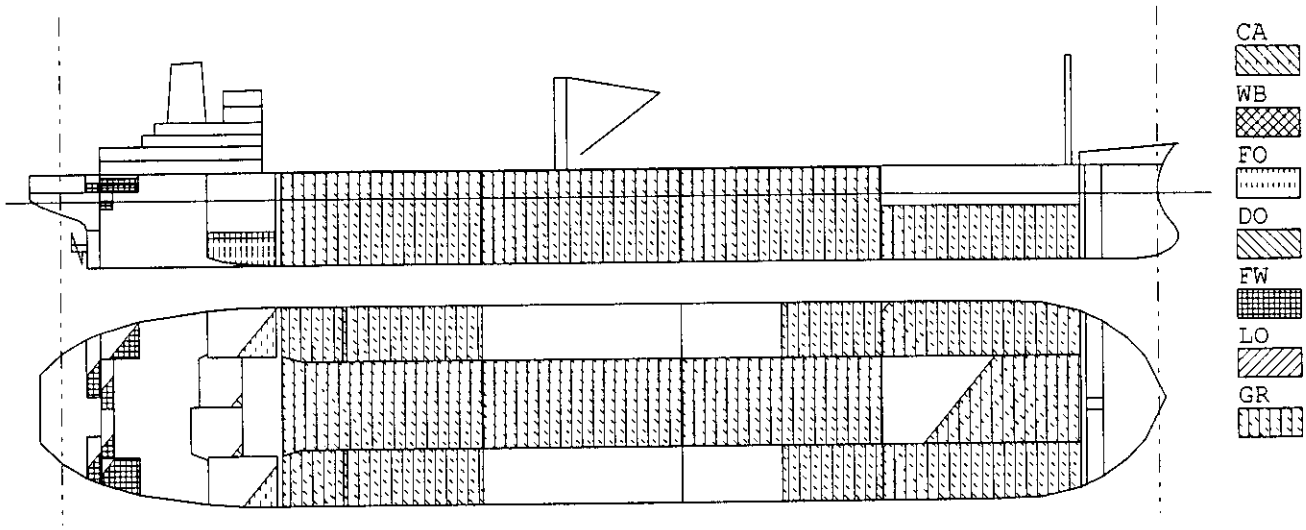
Criterion		Actual		Limit	
Area 0°- 30°	m x RAD	0.5061	>=	0.055	OK
Area 0°- 40.0°	m x RAD	0.8318	>=	0.09	OK
Area 30°- 40.0°	m x RAD	0.3257	>=	0.03	OK
GZ at 30°	m	1.779	>=	0.2	OK
Max GZ Angle	Deg	39.849	>=	25.0	OK
Maximum GZ	1.91 m				
Initial GM	m	3.76	>=	0.15	OK

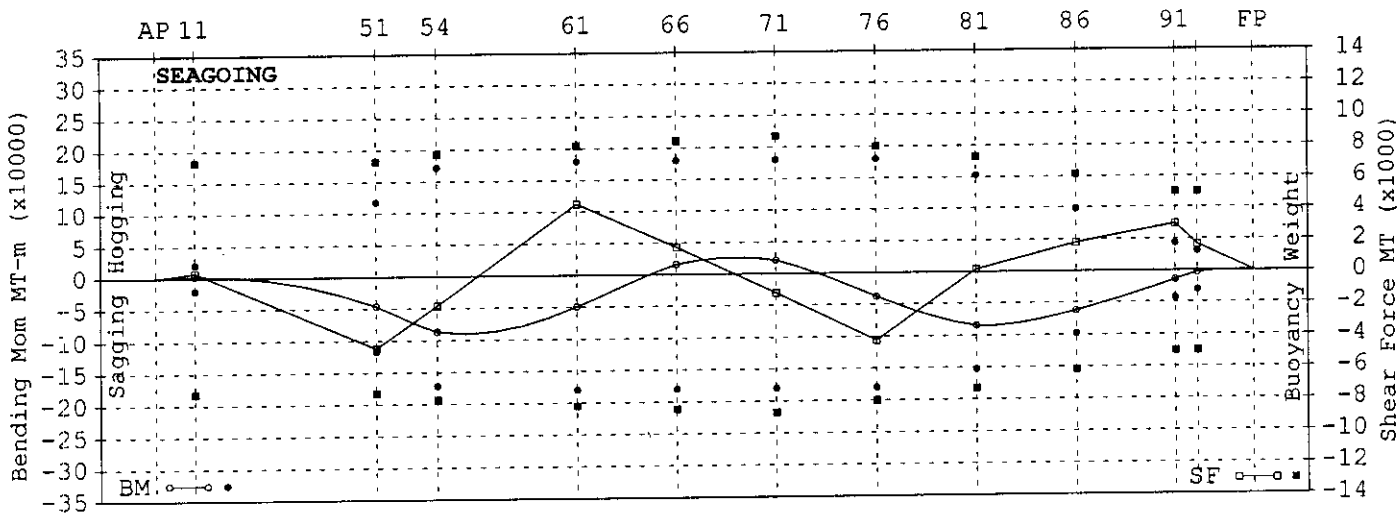


Angle (Deg)	0.00	5.00	10.00	20.00	30.00	45.00	60.00	75.00	90.00
GZ (m)	-0.02	0.31	0.64	1.34	1.78	1.88	1.46	0.70	-0.22

ANKO - MARINE LOAD PLANNER

M/T PRESTIGE INTACT/DATE:13/11/2002..... PAGE :





FRAME No	SHEAR FORCE Actual (MT)	Percent %	Limit (MT)	BENDING MOMENT SEAGOING Actual (MT-m)	Hogging Percent %	Hogging Limit (MT-m)	Sagging Percent %	Sagging Limit (MT-m)
11	297	4	7300	2502	12	20825	-	-20825
51	-4482	61	-7300	-46124	-	117000	39	-117000
54	-1849	24	-7750	-86716	-	172000	50	-172000
61	4480	55	8200	-49487	-	180000	27	-180000
66	1710	20	8450	15460	9	180000	-	-180000
71	-1233	14	-8700	20445	11	180000	-	-180000
76	-4236	53	-8000	-37843	-	180000	21	-180000
81	146	2	7300	-84598	-	153000	55	-153000
86	1787	29	6150	-62207	-	98000	63	-98000
91	2952	59	5000	-14755	-	43000	34	-43000
93	1653	33	5000	-3741	-	30751	12	-30751

SF max -4482 (MT) (Excess Buoyancy) at Frame 51 61% of Max Perm
BM max -90142 (MT-m) (Sagging) at Frame 55 52% of Max Perm
Estimated Deflection Amidships = -3 cm SAGGING

ANKO - MARINE LOAD PLANNER

* 13/11/2002 : DAMAGED CONDITION

M/T PRESTIGE DAMAGED:No3(S)CBT/FLOOD.... PAGE :

LIQUID CARGO IN TANKS

COMPARTMENT NAME	FRAME AFT	FRAME FOR	LOAD No	DENS60 MT/m3	VOLUME (m3)	FIL %	TEMP °F	WEIGHT (MT)	LCG Mid(m)	VCG (m)	FSM (MT*m)
No1 Center COT (C)	81	91	2	0.9906	7093	58	129	6841	78.05	5.60	11911
No2 Center COT (C)	71	81	2	0.9906	12170	99	123	11767	36.05	9.56	11941
No3 Center COT (C)	61	71	2	0.9906	12219	99	122	11819	-6.15	9.60	11945
No4 Center COT (C)	51	61	2	0.9906	12342	99	126	11920	-48.57	9.60	12171
No1 Wing COT (P)	81	91	2	0.9906	6789	96	108	6603	77.12	9.46	2847
No1 Wing COT (S)	81	91	2	0.9906	6933	98	120	6710	77.12	9.65	2833
No2 Wing COT (P)	76	81	2	0.9906	3713	98	124	3588	46.60	9.38	1504
No2 Wing COT (S)	76	81	2	0.9906	3758	99	113	3648	46.60	9.49	1510
No3 Wing COT (P)	61	71									
No3 Wing COT (S)	61	71	3	1.0247	6960	92	60	7132	-6.15	8.80	3188
No4 Wing COT (P)	54	61	2	0.9906	5230	99	122	5059	-41.97	9.60	2107
No4 Wing COT (S)	54	61	2	0.9906	5237	100	122	5065	-41.97	9.61	2107
Slop Tank (P)	51	54	2	0.9906	2050	100	126	1980	-63.02	10.13	860
Slop Tank (S)	51	54	2	0.9906	2040	99	126	1970	-63.02	10.08	860
T O T A L S					86534			84104	11.33	9.20	65783

LIQUID CARGO PER LOAD TYPE

NOTE: [Pd] : Product ASTM-IP Tables
[C] : Crude ASTM-IP Tables

LOAD No	Description	API 60°F	SG 60°F	SG 15°C	MT/m3 60°F	MT/m3 15°C	(MT)	LOADED (Bls)	Bls 60F
2 [Pd]	FUEL OIL -	11.0	0.9927	0.9931	0.9906	0.9910	76971	500500	487298
3 [C]	FLOOD SEA	6.3	1.0268	1.0271	1.0247	1.0250	7132	43779	43779

Ballast **Density = 1.025 MT/m3**

COMPARTMENT NAME	FRAME AFT	FRAME FOR	CAPACITY (m3)	FILL %	WEIGHT (MT)	LCG Mid (m)	VCG (m)	FSM (MT*m)
Fore Peak Tank	93	115	3140.1					
No2 Clean B.Tk (P)	71	76	3791.1					
No2 Clean B.Tk (S)	71	76	3791.1					
Aft Peak Tank (C)	-8	11	506.6					
T O T A L S			11229.0					

Fuel **Density = .930 MT/m3**

COMPARTMENT NAME	FRAME AFT	FRAME FOR	CAPACITY (m3)	FILL %	WEIGHT (MT)	LCG Mid (m)	VCG (m)	FSM (MT*m)
Fore F.O.T. (P)	92	93	818.4					
Fore F.O.T. (S)	92	93	660.2					
Aft F.O.T. (P)	36	50	1234.1	37	424.0	-76.520	5.61	458
Aft F.O.T. (S)	36	50	1486.6	31	424.0	-77.390	5.47	668
T O T A L S			4199.3		848.0	-76.955	5.54	1126

ANKO - MARINE LOAD PLANNER

M/T PRESTIGE DAMAGED:No3(S)CBT/FLOOD.... PAGE :

Diesel Density = .835 MT/m3

COMPARTMENT NAME	FRAME AFT	FRAME FOR	CAPACITY (m3)	FILL %	WEIGHT (MT)	LCG Mid (m)	VCG (m)	FSM (MT*m)
Diesel Oil Tank(P)	34	44	162.8	14	18.5	-82.170	0.17	559
Diesel Oil Tank(S)	32	44	185.0	12	18.5	-83.030	0.15	623
T O T A L S			347.8		37.0	-82.600	0.16	1182

Fresh Water Density = 1.000 MT/m3

COMPARTMENT NAME	FRAME AFT	FRAME FOR	CAPACITY (m3)	FILL %	WEIGHT (MT)	LCG Mid (m)	VCG (m)	FSM (MT*m)
No1 Fresh W.Tk (P)	11	20	103.3	50	51.7	-103.330	16.91	106
No2 Fresh W.Tk (P)	11	14	81.2	50	40.6	-106.370	13.37	250
No2 Fresh W.Tk (S)	11	14	81.2	38	31.0	-106.370	13.13	250
No3 Fresh W.Tk (P)	7	11	89.0	50	44.5	-109.220	16.83	245
No3 Fresh W.Tk (S)	7	11	60.0	50	30.0	-109.210	16.86	103
Distil.Water Tk(S)	11	20	103.3	80	82.3	-103.330	17.37	106
T O T A L S			518.0		280.1	-105.672	16.10	1060

CONSTANTS

Ref No	DESCRIPTION OF LOADED WEIGHT	FRAME AFT	FRAME FOR	LENGTH (m)	WEIGHT (MT)	VCG(BL) (m)	LCG Mid (m)	TCG (m)
1.	Crew & Effects	20	41	19.30	5.0	22.60	-90.00	0.00
2.	Store	64	70	23.58	70.0	18.80	-3.00	0.00
3.	Cooling Water Tank	7	12	4.16	26.0	4.90	-108.67	0.00
4.	Oil & Water in E/R	30	41	9.98	272.0	14.14	-85.66	0.00
5.	Spare Shaft & Prop.	52	53	4.88	44.0	14.21	-62.99	0.00
6.	Anodes	64	67	14.04	47.0	3.89	-7.77	0.00
	T O T A L S				464.0	13.38	-64.49	0.00

ANKO - MARINE LOAD PLANNER

M/T PRESTIGE DAMAGED:No3(S)CBT/FLOOD.... PAGE :

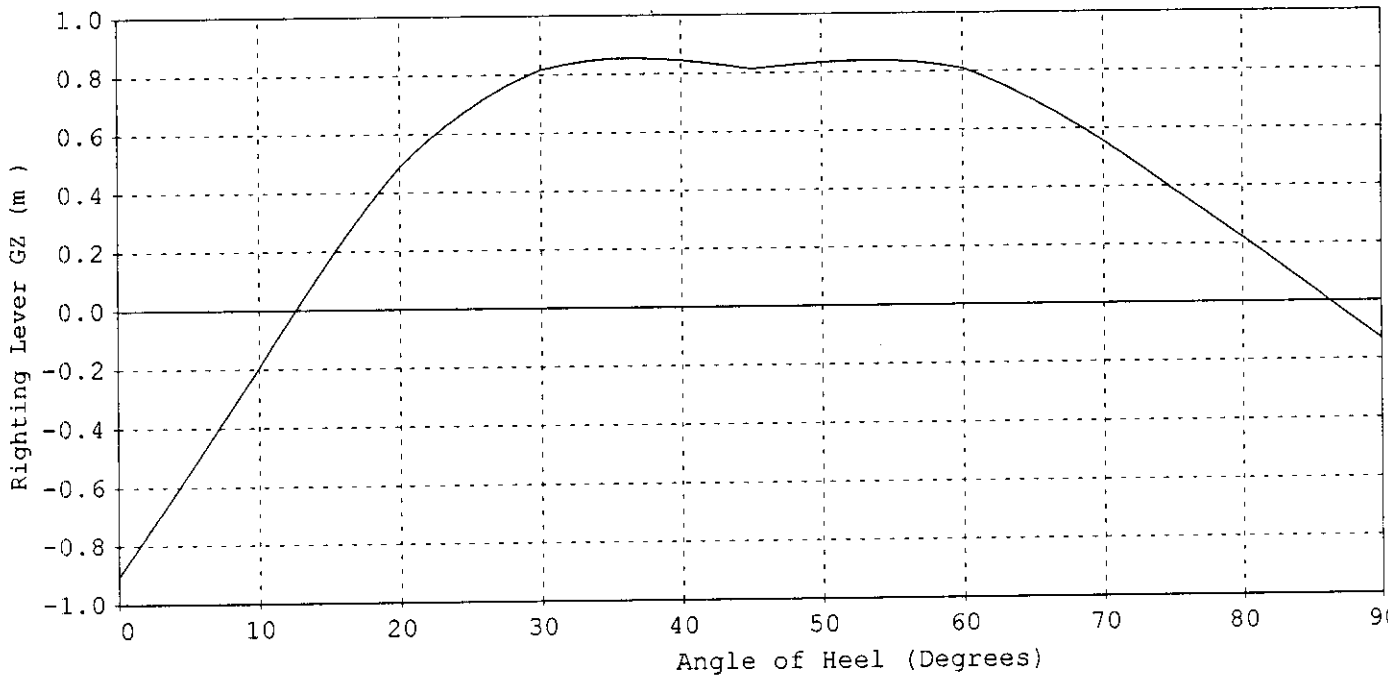
INTACT STABILITY ANALYSIS Sea Density : 1.0250 MT/m3

ITEMS	Weight MT	VCG m	LCG m	FSM MT-m
LightShip	15164	11.19	-14.66	0
Constants	464	13.38	-64.49	0
Cargo	84104	9.20	11.33	65783
Ballast	0	0.00	0.00	0
Fresh Water	280	16.10	-105.67	1060
Fuel Oil	848	5.54	-76.96	1126
Diesel Oil	37	0.16	-82.60	1182
Lub Oil	0	0.00	0.00	0
Stores	0	0.00	0.00	0
Deadweight	85733	9.21	9.62	69151
TOTALS	100896	9.51	5.97	69151

HYDROSTATICS		
Draft FPP	14.36	m
Mk	14.36	m
APP	14.88	m
Mk	14.86	m
Mid	14.62	m
Mk	14.62	m
LCF	14.61	m
TRIM	0.52	m
HEEL	12.6	Deg
LCF	1.00	m
Prop Tip	-7.27	m
TPC-I	74.38	MT/cm
MCT	1301.9	MT-m/cm
MCH	6917	MT-m/deg
FLood	41.3	Deg
LCB	6.64	m
KM(T)	14.12	m
KG	9.51	m
GM	4.61	m
GGo	0.69	m
GoM	3.93	m
KG(eff)	10.19	m

STABILITY CRITERIA

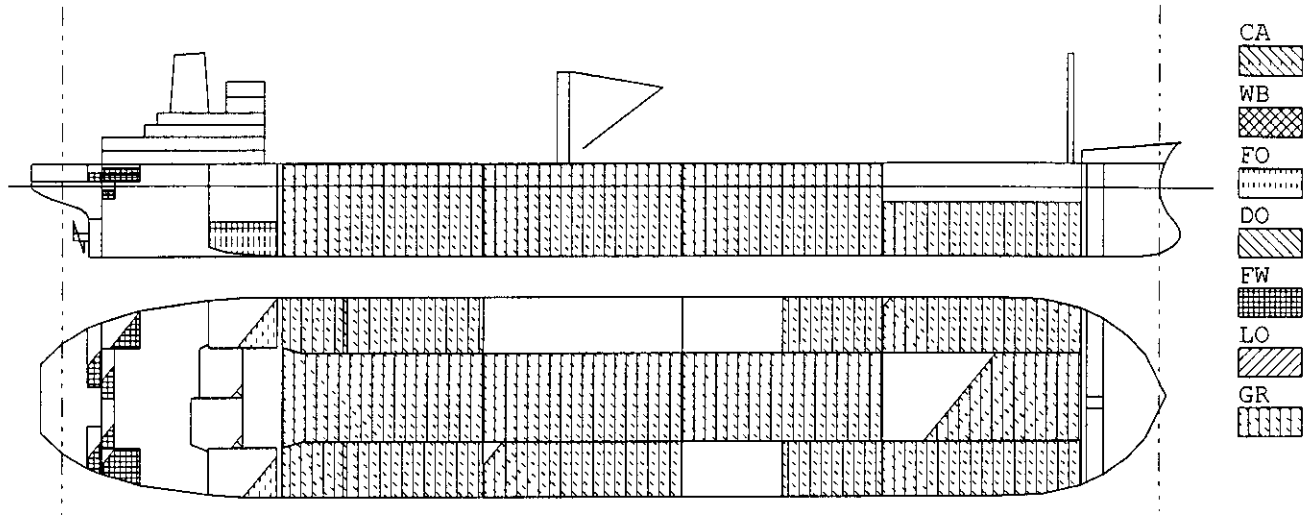
Criterion		Actual		Limit	
Area 0°- 30°	m x RAD	0.1513	>=	0.055	OK
Area 0°- 40.0°	m x RAD	0.2988	>=	0.09	OK
Area 30°- 40.0°	m x RAD	0.1475	>=	0.03	OK
GZ at 30°	m	0.816	>=	0.2	OK
Max GZ Angle	Deg	36.295	>=	25.0	OK
Maximum GZ	0.85 m				
Initial GM	m	3.928	>=	0.15	OK

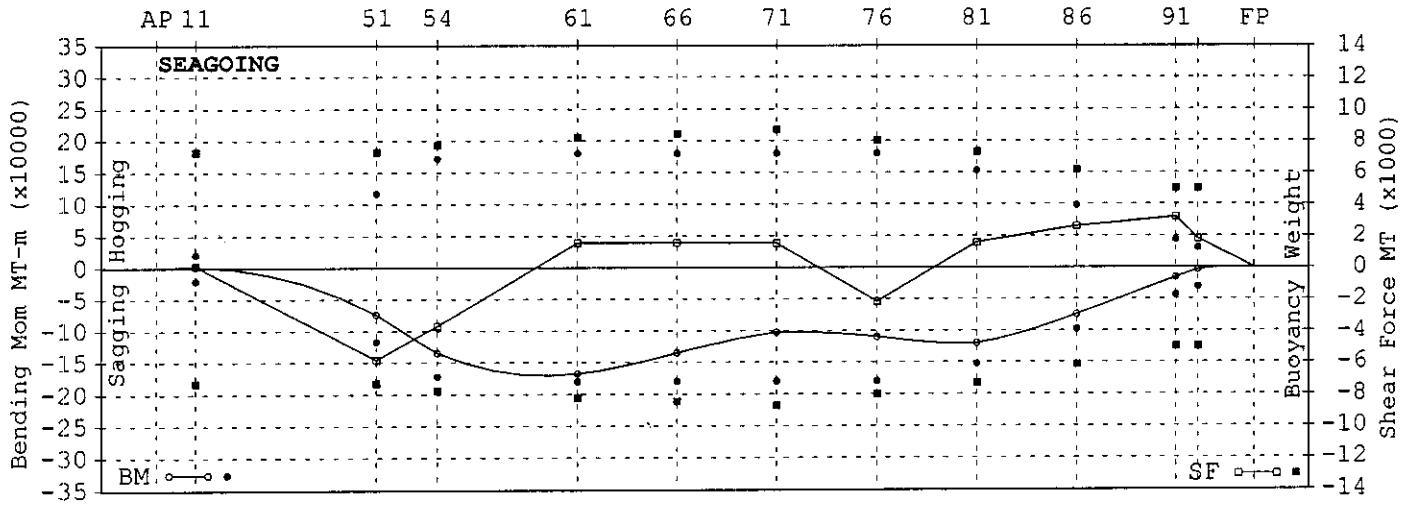


Angle (Deg)	0.00	5.00	10.00	20.00	30.00	45.00	60.00	75.00	90.00
GZ (m)	-0.90	-0.55	-0.20	0.49	0.82	0.81	0.81	0.39	-0.13

ANKO - MARINE LOAD PLANNER

M/T PRESTIGE DAMAGED:No3(S)CBT/FLOOD.... PAGE :





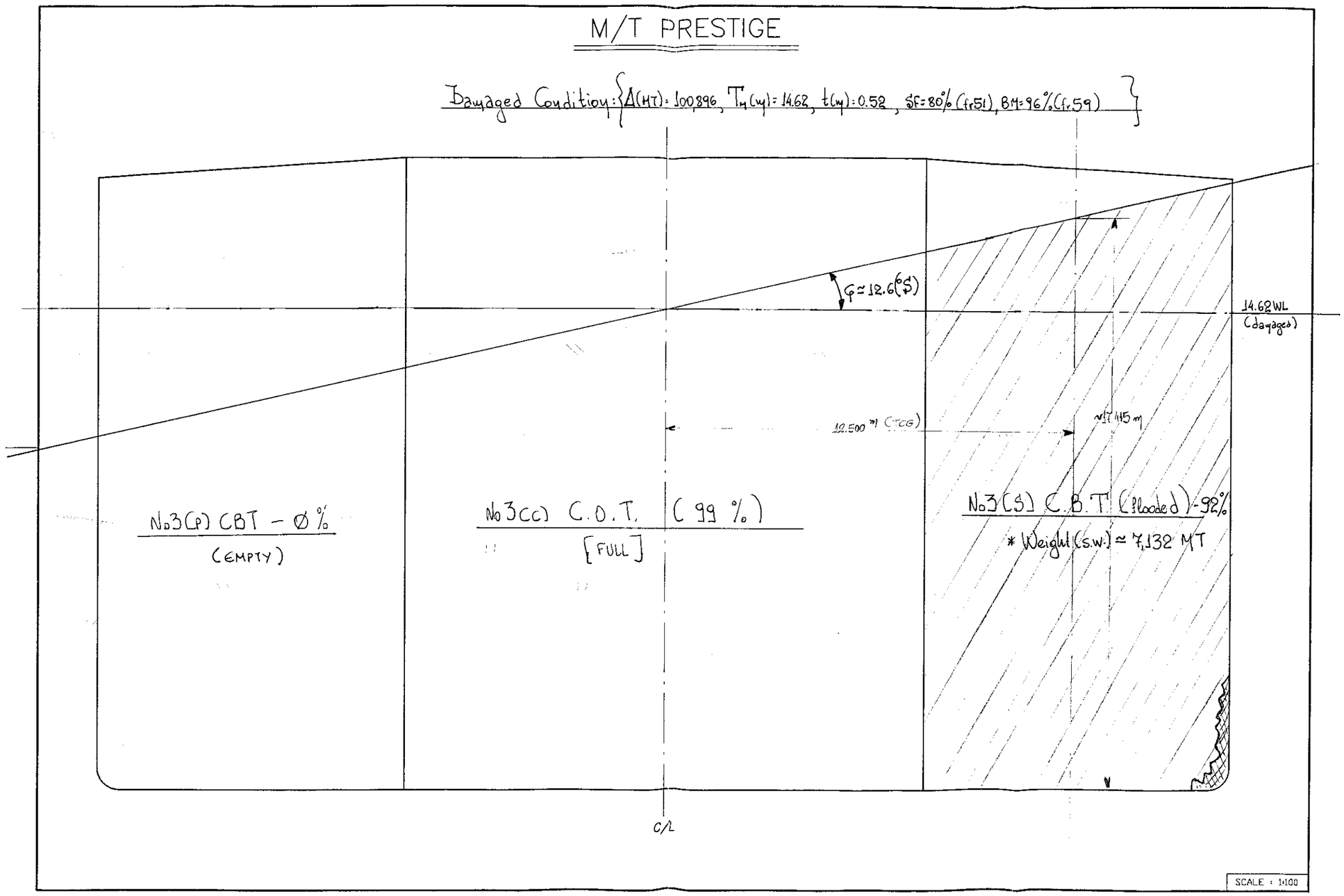
FRAME No	SHEAR FORCE Actual (MT)	Percent %	Limit (MT)	BENDING MOMENT SEAGOING Hogging Actual (MT-m)	Percent %	Limit (MT-m)	Sagging Percent %	Limit (MT-m)
11	129	2	7300	1589	8	20825	-	-20825
51	-5834	80	-7300	-73784	-	117000	63	-117000
54	-3680	47	-7750	-134521	-	172000	78	-172000
61	1561	19	8200	-167586	-	180000	93	-180000
66	1566	19	8450	-135177	-	180000	75	-180000
71	1527	18	8700	-102836	-	180000	57	-180000
76	-2159	27	-8000	-110141	-	180000	61	-180000
81	1570	22	7300	-120010	-	153000	78	-153000
86	2587	42	6150	-74210	-	98000	76	-98000
91	3182	64	5000	-16116	-	43000	37	-43000
93	1782	36	5000	-4250	-	30751	14	-30751

SF max -5834 (MT) (Excess Buoyancy) at Frame 51 80% of Max Perm
BM max -170285 (MT-m) (Sagging) at Frame 59 96% of Max Perm
Estimated Deflection Amidships = -11 cm SAGGING

ANKO - MARINE LOAD PLANNER

M/T PRESTIGE

Damaged Condition: {Δ(MT): 100,896, T_M(m): 14.68, t(m): 0.58, SF: 80% (fr.51), BM: 96% (fr.59)}



* ADJUST HEEL BY No2WBT(P) AND No3CBT(P)

M/T PRESTIGE ADJUST TRIM WITH No2&3P.... PAGE :

LIQUID CARGO IN TANKS

COMPARTMENT NAME	FRAME AFT	FRAME FOR	LOAD No	DENS60 MT/m3	VOLUME (m3)	FIL %	TEMP °F	WEIGHT (MT)	LCG Mid(m)	VCG (m)	FSM (MT*m)
No1 Center COT (C)	81	91	2	0.9906	7093	58	129	6841	78.05	5.60	11911
No2 Center COT (C)	71	81	2	0.9906	12170	99	123	11767	36.05	9.56	11941
No3 Center COT (C)	61	71	2	0.9906	12219	99	122	11819	-6.15	9.60	11945
No4 Center COT (C)	51	61	2	0.9906	12342	99	126	11920	-48.57	9.60	12171
No1 Wing COT (P)	81	91	2	0.9906	6789	96	108	6603	77.12	9.46	2847
No1 Wing COT (S)	81	91	2	0.9906	6933	98	120	6710	77.12	9.65	2833
No2 Wing COT (P)	76	81	2	0.9906	3713	98	124	3588	46.60	9.38	1504
No2 Wing COT (S)	76	81	2	0.9906	3758	99	113	3648	46.60	9.49	1510
No3 Wing COT (P)	61	71	3	1.0247	3904	51	60	4000	-6.15	4.98	3188
No3 Wing COT (S)	61	71	3	1.0247	6182	82	60	6334	-6.15	7.83	3188
No4 Wing COT (P)	54	61	2	0.9906	5230	99	122	5059	-41.97	9.60	2107
No4 Wing COT (S)	54	61	2	0.9906	5237	100	122	5065	-41.97	9.61	2107
Slop Tank (P)	51	54	2	0.9906	2050	100	126	1980	-63.02	10.13	860
Slop Tank (S)	51	54	2	0.9906	2040	99	126	1970	-63.02	10.08	860
T O T A L S					89659			87306	10.69	8.94	68971

LIQUID CARGO PER LOAD TYPE

NOTE: [Pd] : Product ASTM-IP Tables
[C] : Crude ASTM-IP Tables

LOAD No	Description	API 60°F	SG 60°F	SG 15°C	MT/m3 60°F	MT/m3 15°C	(MT)	LOADED (Bls)	Bls 60F
2 [Pd]	FUEL OIL -	11.0	0.9927	0.9931	0.9906	0.9910	76971	500500	487298
3 [C]	FLOOD SEA	6.3	1.0268	1.0271	1.0247	1.0250	10334	63437	63437

Ballast Density = 1.025 MT/m3

COMPARTMENT NAME	FRAME AFT	FRAME FOR	CAPACITY (m3)	FILL %	WEIGHT (MT)	LCG Mid (m)	VCG (m)	FSM (MT*m)
Fore Peak Tank	93	115	3140.1					
No2 Clean B.Tk (P)	71	76	3791.1	51	2000.0	25.500	4.99	1595
No2 Clean B.Tk (S)	71	76	3791.1					
Aft Peak Tank (C)	-8	11	506.6					
T O T A L S			11229.0		2000.0	25.500	4.99	1595

Fuel Density = .930 MT/m3

COMPARTMENT NAME	FRAME AFT	FRAME FOR	CAPACITY (m3)	FILL %	WEIGHT (MT)	LCG Mid (m)	VCG (m)	FSM (MT*m)
Fore F.O.T. (P)	92	93	818.4					
Fore F.O.T. (S)	92	93	660.2					
Aft F.O.T. (P)	36	50	1234.1	37	424.0	-76.520	5.61	458
Aft F.O.T. (S)	36	50	1486.6	31	424.0	-77.390	5.47	668
T O T A L S			4199.3		848.0	-76.955	5.54	1126

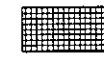
ANKO - MARINE LOAD PLANNER

M/T PRESTIGE ADJUST TRIM WITH No2&3P.... PAGE :

Diesel Density = .835 MT/m3

COMPARTMENT NAME	FRAME AFT	FRAME FOR	CAPACITY (m3)	FILL %	WEIGHT (MT)	LCG Mid (m)	VCG (m)	FSM (MT*m)
Diesel Oil Tank(P)	34	44	162.8	14	18.5	-82.170	0.17	559
Diesel Oil Tank(S)	32	44	185.0	12	18.5	-83.030	0.15	623
T O T A L S			347.8		37.0	-82.600	0.16	1182

Fresh Water Density = 1.000 MT/m3



COMPARTMENT NAME	FRAME AFT	FRAME FOR	CAPACITY (m3)	FILL %	WEIGHT (MT)	LCG Mid (m)	VCG (m)	FSM (MT*m)
No1 Fresh W.Tk (P)	11	20	103.3	50	51.7	-103.330	16.91	106
No2 Fresh W.Tk (P)	11	14	81.2	50	40.6	-106.370	13.37	250
No2 Fresh W.Tk (S)	11	14	81.2	38	31.0	-106.370	13.13	250
No3 Fresh W.Tk (P)	7	11	89.0	50	44.5	-109.220	16.83	245
No3 Fresh W.Tk (S)	7	11	60.0	50	30.0	-109.210	16.86	103
Distil.Water Tk(S)	11	20	103.3	80	82.3	-103.330	17.37	106
T O T A L S			518.0		280.1	-105.672	16.10	1060

CONSTANTS

Ref No	DESCRIPTION OF LOADED WEIGHT	FRAME AFT	FRAME FOR	LENGTH (m)	WEIGHT (MT)	VCG(BL) (m)	LCG Mid (m)	TCG (m)
1.	Crew & Effects	20	41	19.30	5.0	22.60	-90.00	0.00
2.	Store	64	70	23.58	70.0	18.80	-3.00	0.00
3.	Cooling Water Tank	7	12	4.16	26.0	4.90	-108.67	0.00
4.	Oil & Water in E/R	30	41	9.98	272.0	14.14	-85.66	0.00
5.	Spare Shaft & Prop.	52	53	4.88	44.0	14.21	-62.99	0.00
6.	Anodes	64	67	14.04	47.0	3.89	-7.77	0.00
	T O T A L S				464.0	13.38	-64.49	0.00

ANKO - MARINE LOAD PLANNER

M/T PRESTIGE ADJUST TRIM WITH No2&3P.... PAGE :

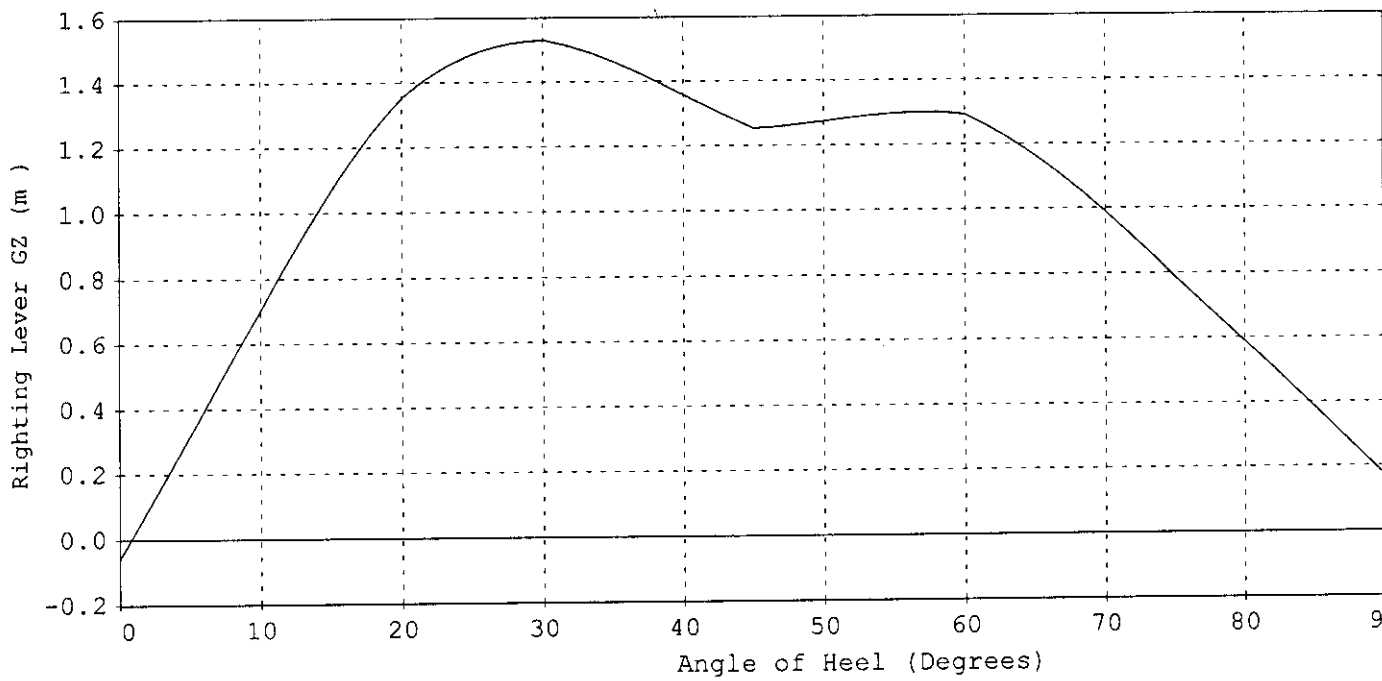
INTACT STABILITY ANALYSIS Sea Density : 1.0250 MT/m3

ITEMS	Weight MT	VCG m	LCG m	FSM MT-m
LightShip	15164	11.19	-14.66	0
Constants	464	13.38	-64.49	0
Cargo	87306	8.94	10.69	68971
Ballast	2000	4.99	25.50	1595
Fresh Water	280	16.10	-105.67	1060
Fuel Oil	848	5.54	-76.96	1126
Diesel Oil	37	0.16	-82.60	1182
Lub Oil	0	0.00	0.00	0
Stores	0	0.00	0.00	0
Deadweight	90935	8.86	9.42	73934
TOTALS	106099	9.20	5.97	73934

HYDROSTATICS		
Draft FPP	15.16	m
Mk	15.16	m
APP	15.46	m
Mk	15.45	m
Mid	15.31	m
Mk	15.31	m
LCF	15.31	m
TRIM	0.30	m
HEEL	0.8	Deg
LCF	0.30	m
Prop Tip	-7.85	m
TPC-I	75.04	MT/cm
MCT	1333.4	MT-m/cm
MCH	8025	MT-m/deg
FLood	38.5	Deg
LCB	6.35	m
KM(T)	14.23	m
KG	9.20	m
GM	5.03	m
GGo	0.70	m
GoM	4.33	m
KG(eff)	9.89	m

STABILITY CRITERIA

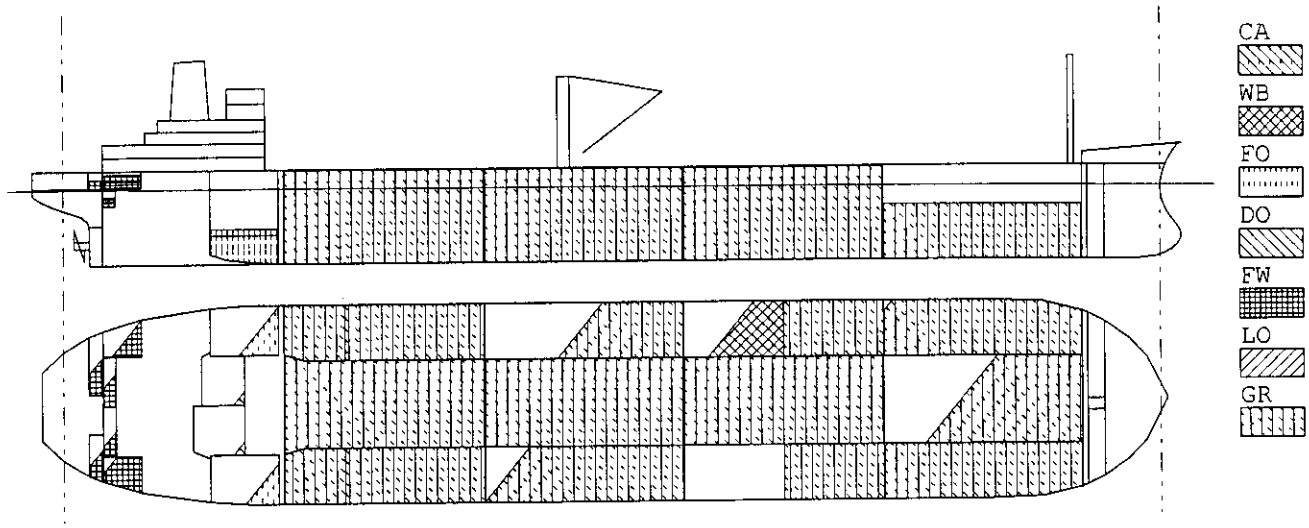
Criterion		Actual		Limit	
Area 0°- 30°	m x RAD	0.4976	>=	0.055	OK
Area 0°- 38.5°	m x RAD	0.7148	>=	0.09	OK
Area 30°- 38.5°	m x RAD	0.2172	>=	0.03	OK
GZ at 30°	m	1.53	>=	0.2	OK
Max GZ Angle	Deg	30.0	>=	25.0	OK
Maximum GZ	1.53 m				
Initial GM	m	4.334	>=	0.15	OK

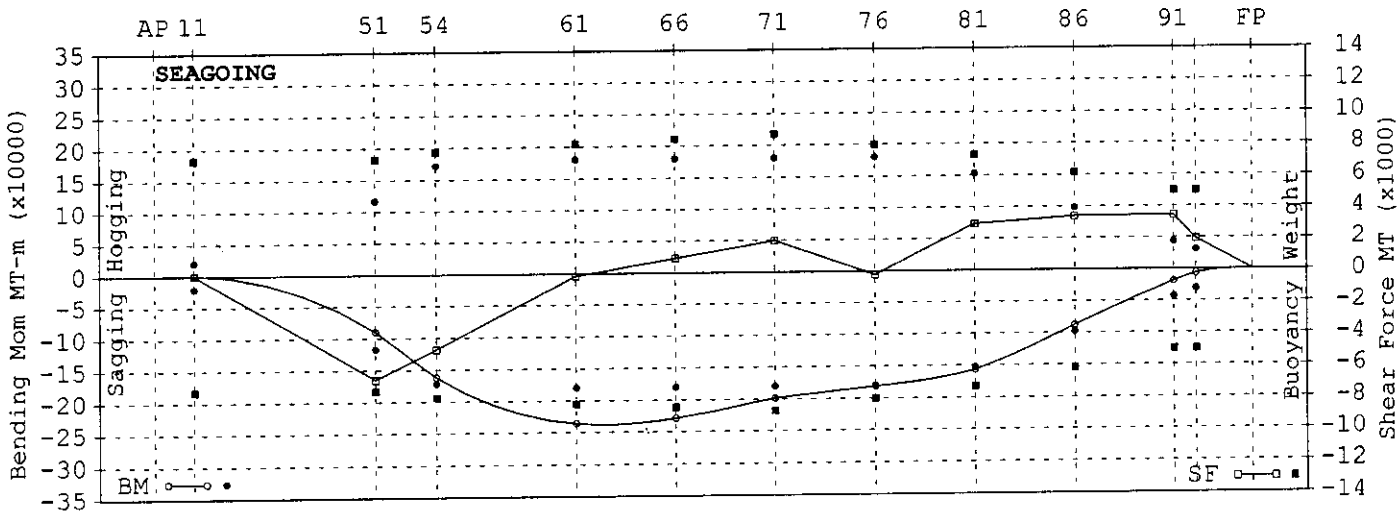


Angle (Deg)	0.00	5.00	10.00	20.00	30.00	45.00	60.00	75.00	90.00
GZ (m)	-0.06	0.32	0.70	1.35	1.53	1.25	1.29	0.79	0.17

ANKO - MARINE LOAD PLANNER

M/T PRESTIGE ADJUST TRIM WITH No2&3P.... PAGE :





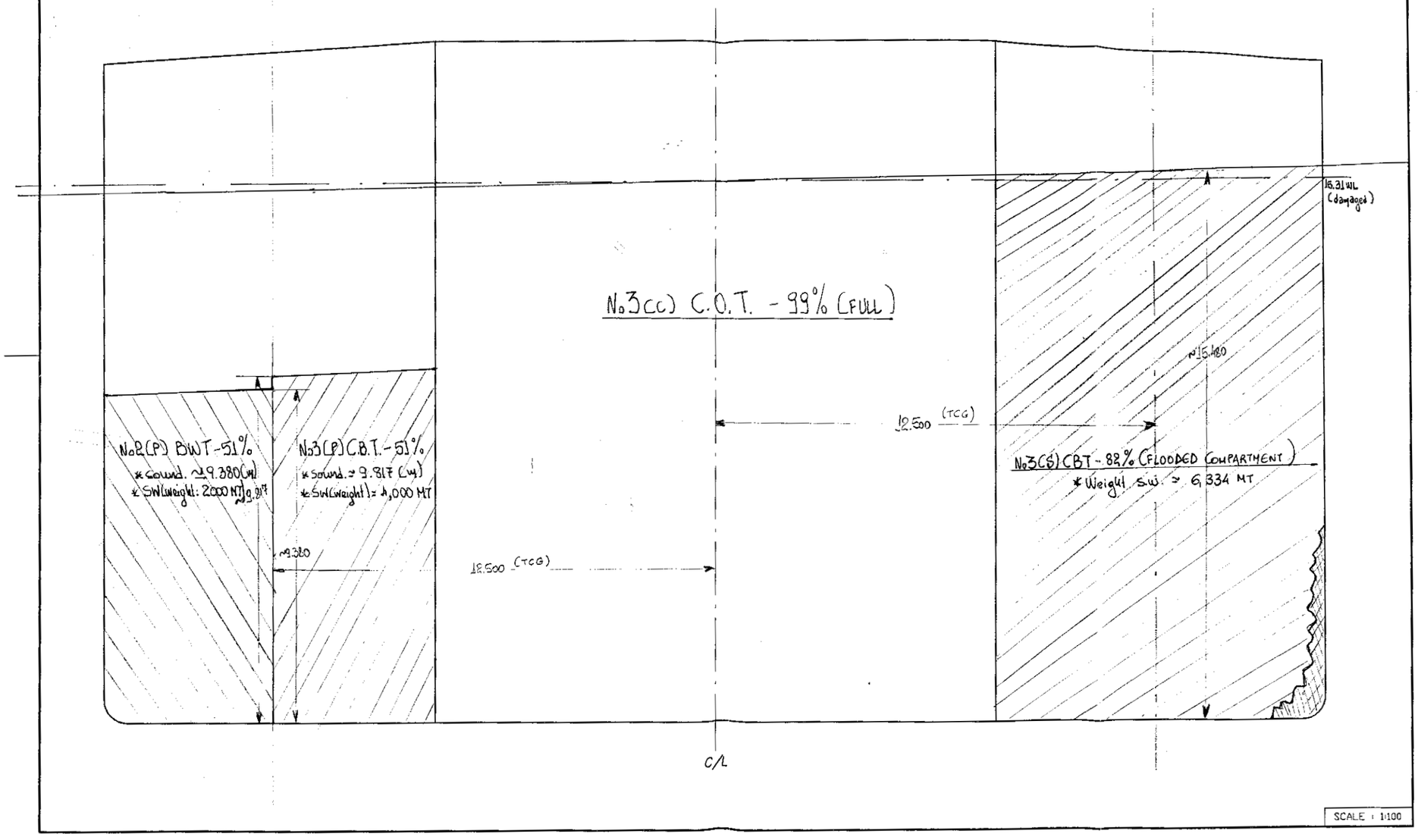
FRAME No	SHEAR FORCE Actual (MT)	Percent %	Limit (MT)	BENDING MOMENT SEAGOING Hogging Actual (MT-m)	Percent %	Limit (MT-m)	Sagging Percent %	Limit (MT-m)
11	24	0	7300	978	5	20825	-	-20825
51	-6604	90	-7300	-89803	-	117000	77	-117000
54	-4730	61	-7750	-162048	-	172000	94	-172000
61	-167	2	-8200	-236070	-	180000	131	-180000
66	913	11	8450	-228839	-	180000	127	-180000
71	1978	23	8700	-198698	-	180000	110	-180000
76	-244	3	-8000	-181419	-	180000	101	-180000
81	2934	40	7300	-156676	-	153000	102	-153000
86	3383	55	6150	-88068	-	98000	90	-98000
91	3417	68	5000	-19221	-	43000	45	-43000
93	1914	38	5000	-6483	-	30751	21	-30751

SF max -6604 (MT) (Excess Buoyancy) at Frame 51 90% of Max Perm
BM max -237926 (MT-m) (Sagging) at Frame 62 132% of Max Perm
Estimated Deflection Amidships = -16 cm SAGGING

ANKO - MARINE LOAD PLANNER

M/T PRESTIGE

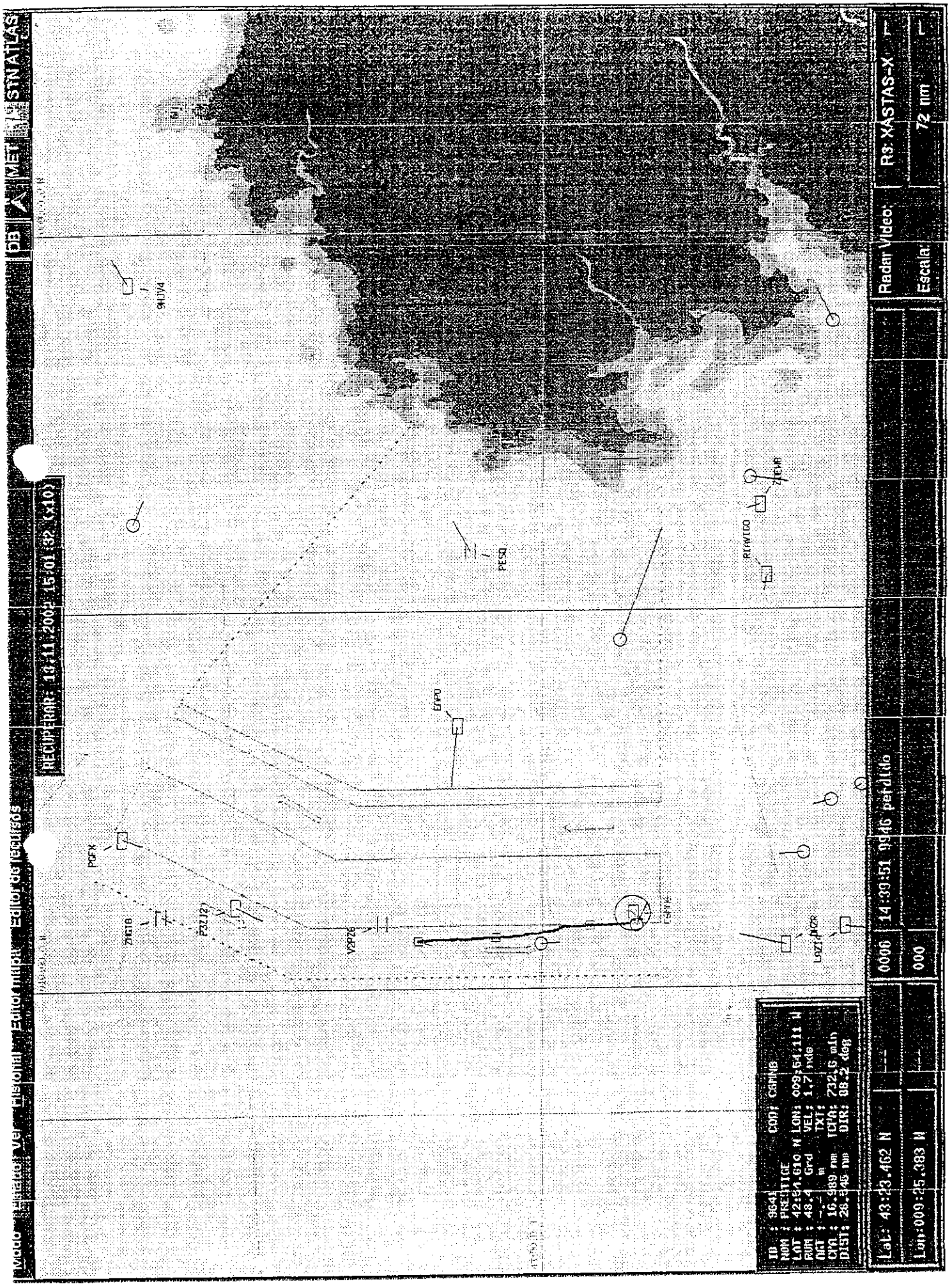
Adjust heel with No2 BWT(P) & No3 CBT(P) : { Δ(MT) = 106,099, T_M(m) = 15.31, t = 0.30 (m), SF = 90%, BM = 132% }
φ = 0.8(°S)

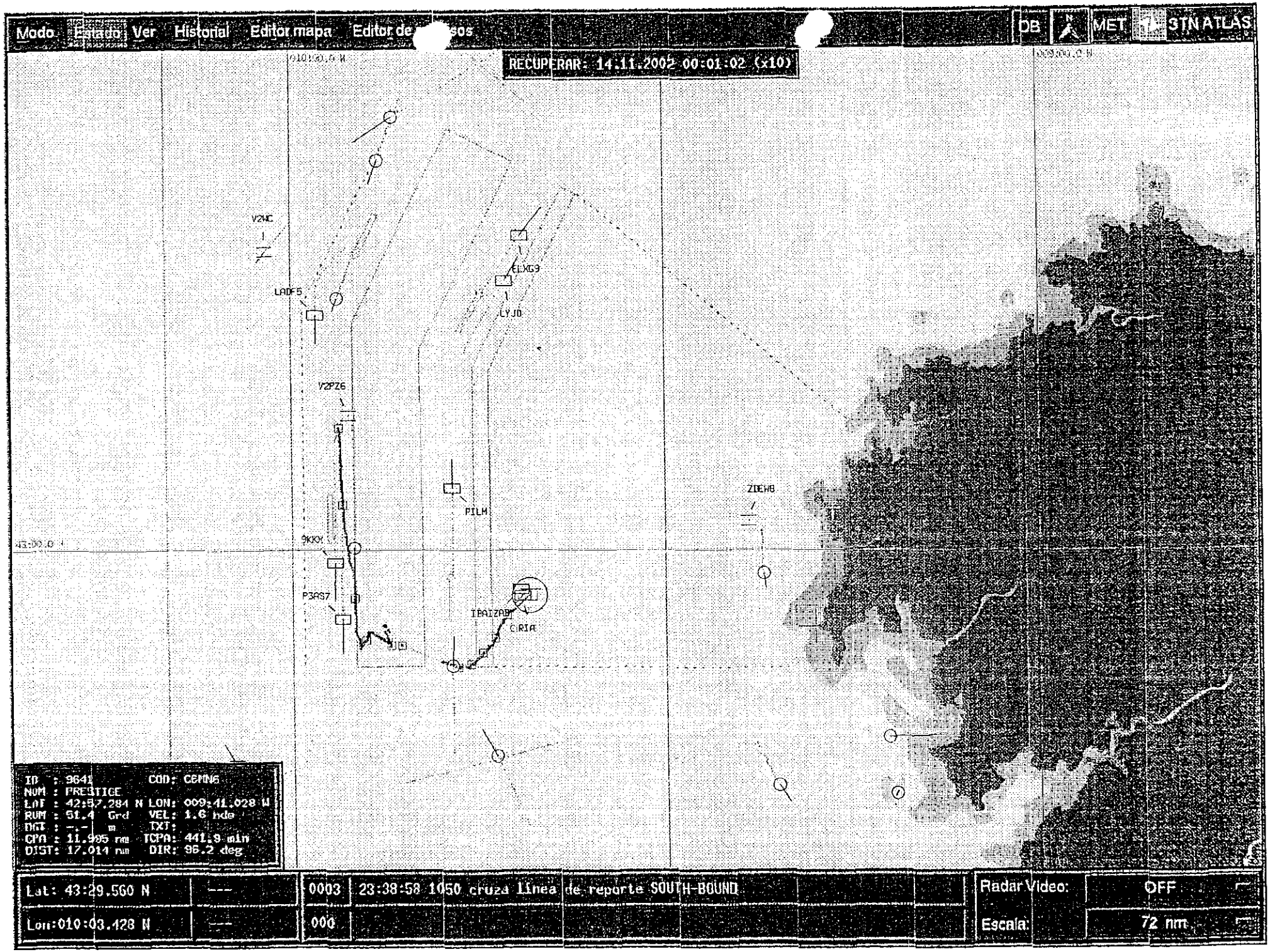


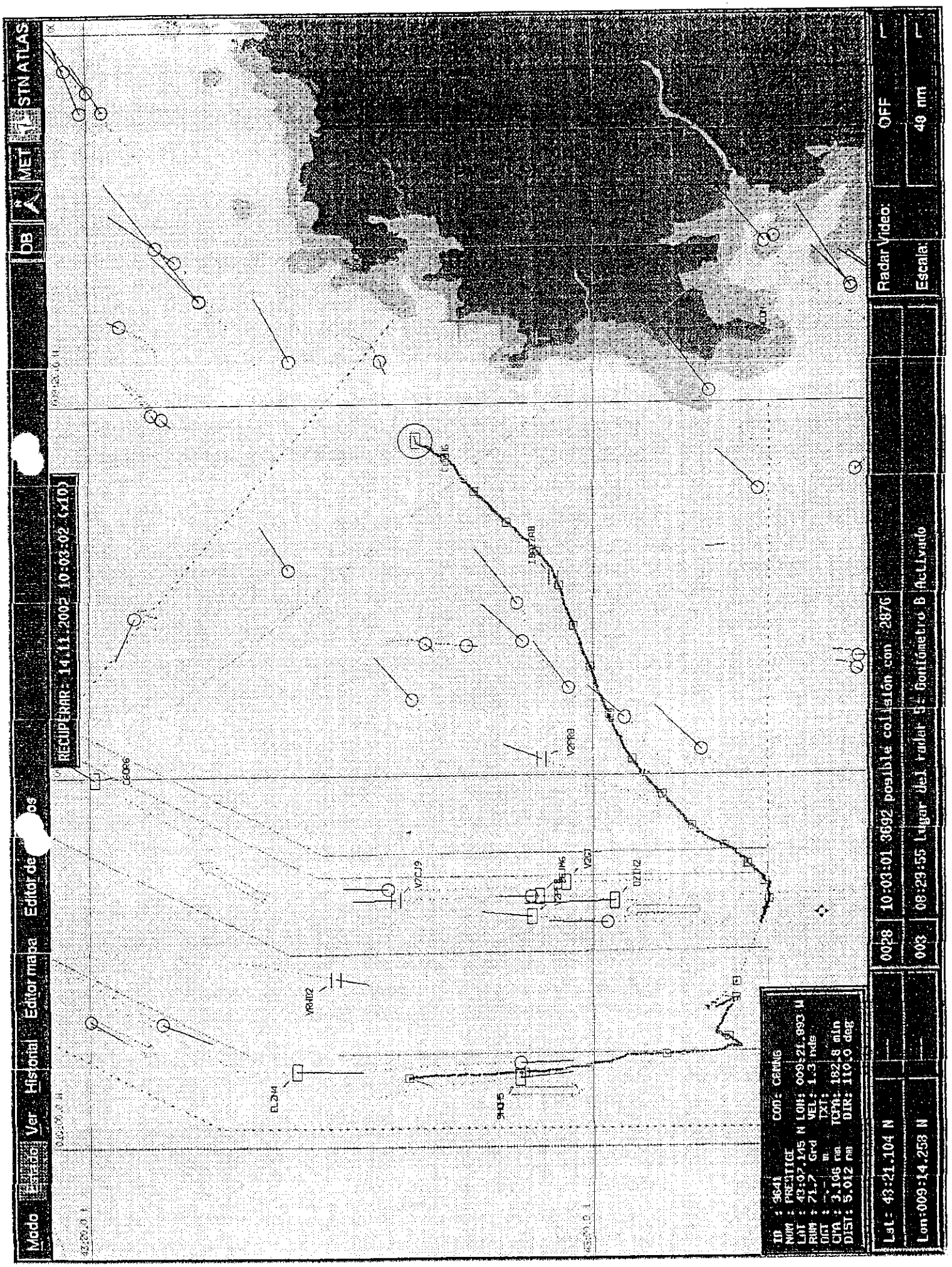
APPENDIX I

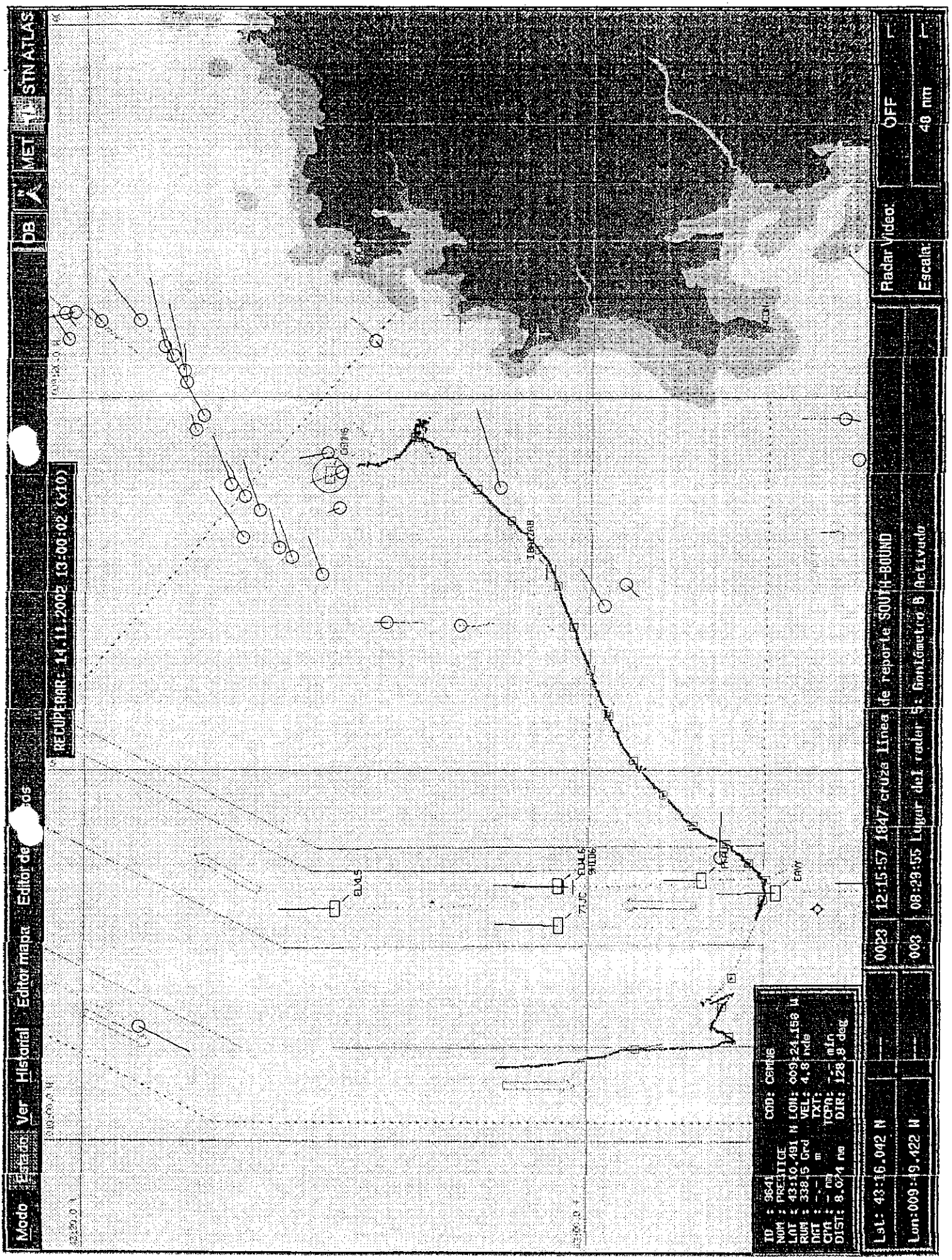
Radar Plots and Radio Calls

- Finisterre Traffic Radar Plots
- Transcript of calls to and from the Prestige on VHF Channels 11 and 16

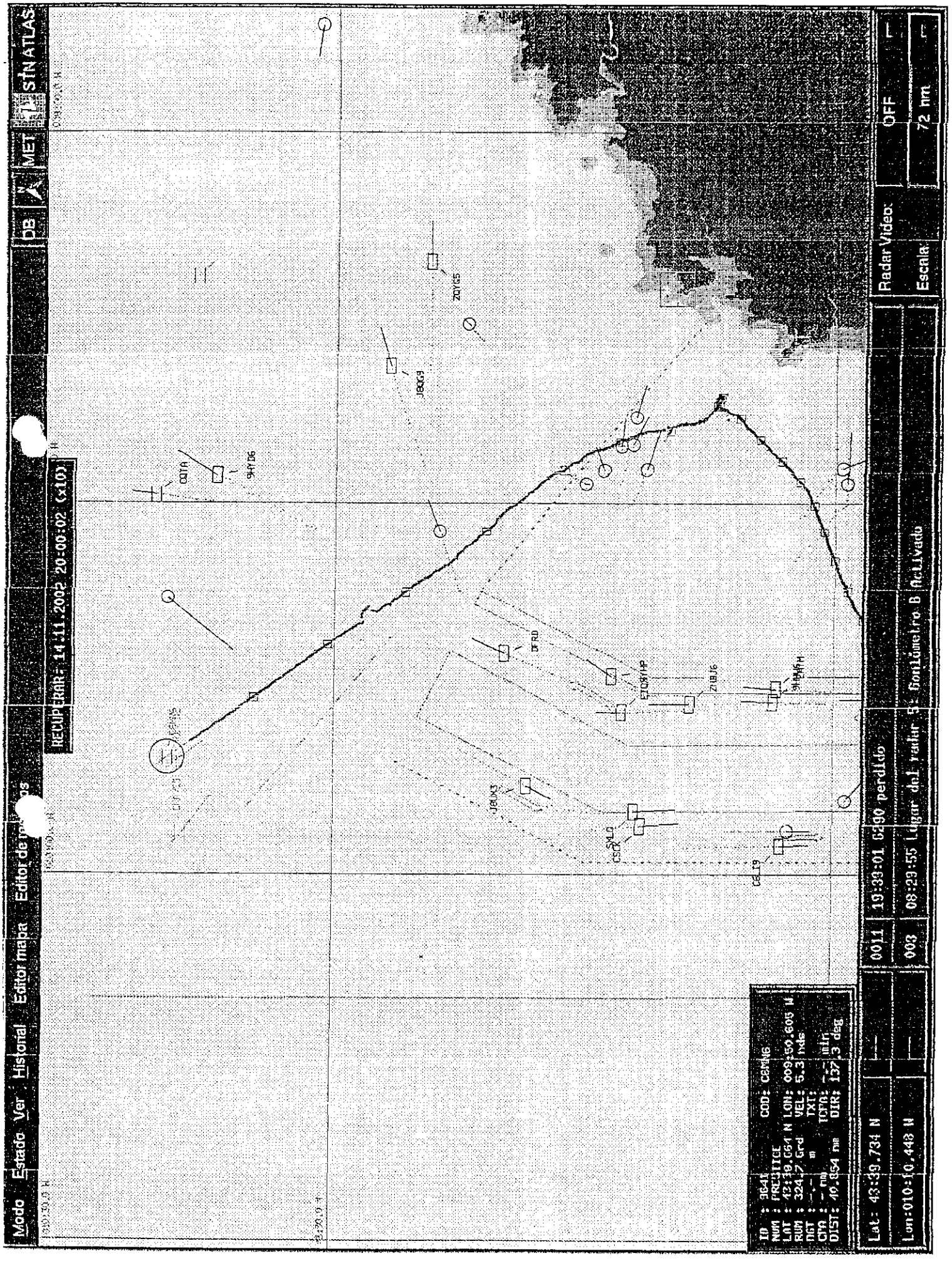

Modo Histórico Ver Edición Herramientas Editor de recursos
DB
MET
STNATLAS
RECUPERAR: 13:11:2002 15:01:32 (x10)
Radar Video
R3: XASTAS-X
Escala:
72 nm
Lat: 43:23.462 N
Lon:009:25.383 W
0006 14:39:51 9946 perdido
000
ID : 3641
NOM : PRESTIGE
LAT : 42:59.610 N LON: 009:54.111 W
RUM : 48.4 VEL: 1.7 nds
ALT : --- m TXI:
CPA : 16.989 nm TCPA: 232.6 min
DIST: 26.345 nm DIR: 88.2 deg
COG: CAPTAIN
PESQ
ERPO
VGPZ6
ZIGTB
PGFX
PZJZ12
RIAVIGO
ZIEMB
LGZIPMZR
9HJV4

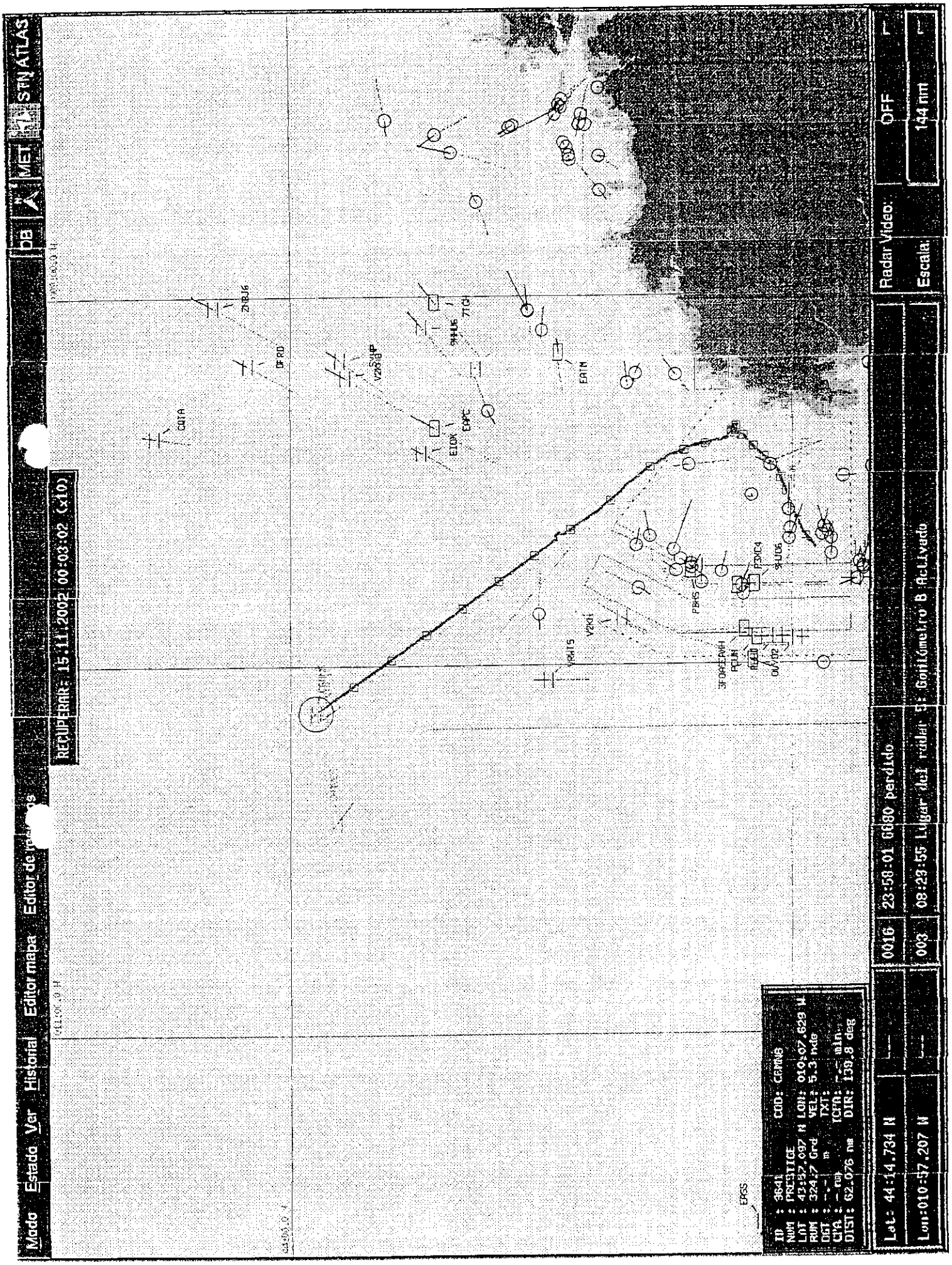

Modo
Estado
Ver
Historial
Editor mapa
DB
MET
3TN ATLAS
RECUPERAR: 14.11.2002 00:01:02 (x10)
V2MC
LADF5
EIXG9
LYJD
V2PZ6
PILM
ZDEW8
9KKX
P3RS7
IBAIZABAL
CIRIA
ID : 9641 COD: CBMN6
NUM : PRESTIGE
LAT : 42:57.284 N LON: 009:41.028 W
RUM : 51.4 Grd VEL: 1.6 nds
DGT : -.- m TXT:
CPA : 11.985 nm TCPA: 441.8 min
DIST: 17.014 nm DIR: 96.2 deg
Lat: 43:29.560 N
Lon:010:03.428 N
0003
23:38:58 1050 cruza linea de reporte SOUTH-BOUND
000
Radar Video:
OFF
Escala:
72 nm


Modo Estación
Ver
Historial
Editor mapa
Editor de
RECUPERAR - 14.11.2002 10:03:02 (x10)
STN ATLAS
MET
DB
Radar Video
OFF
Escala
40 nm
ID : 3641
NOM : PRESTIGE
LAT : 43:07.145 N LON: 009:21.893 W
RUM : 71.7 Grd VEL: 1.3 kts
DIST : --- m TXT:
CPA : 3.106 nm TCPA: 182.8 min
DIST: 5.012 nm DIR: 110.0 deg
Lat: 43:11.104 N
Lon:009:14.253 W
0028 10:03:01 3692 posible collision con 2876
003 08:29:55 Lugar del radar 5: Goniómetro B Activado
C6DK6
C6MG6
V2AB
V2AB
V2CJ9
V2AD2
V2AD2
V2I2
V2I2
EL2H4
3405


Modo Estación Ver Historial Editar mapa Editor de
DB MET STN ATLAS
RECUPERAR: 14.11.2002 13:00:02 (x10)
Radar Video: OFF
Escala: 48 nm
ID : 3641
Nom : PRESTIGE
Lat : 43:10.491 N Lon: 009:24.158 W
Rum : 338.5 Grd Vel : 4.8 nds
Dst : - - nm Txt :
CPA : - - nm TCPA: - - min
DIST: 8.074 nm DIR: 128.8 deg
CMD: CRUZA
0023 12:15:57 1847 cruza Linea de reporte SOUTH-BOUND
003 08:28:55 Lugar del radar 5: Anillo Activado
Lat: 43:16.042 N
Lon:009:49.122 W

Modo Estado Ver Historial Editor mapa Editor de
DB
MET
STNATLAS
RECUPERAR: 14.11.2002 16:00:02 (x10)
PFAJ
MZXS5
B3AT7
B01E
JCDG3
CFRUH
MZXS6
ID : 3641
NOM : PRESTIGE
LAT : 43:21.718 N LON: 009:33.152 W
RUM : 332.3 Grd VEL: 5.5 kts
DAT : ---.- m TXT: ---
CPA: --.- nm TCPA: --.- min
DIST: 19.278 nm DIR: 128.8 deg
COD: CBMG
Lat: 43:29.560 N
Lon:010:38.160 W
0014 14:32:58 4047 perdido
003 08:29:55 Lugar del radar: 5; Perímetro B Activado
Radar Video:
OFF
Escala:
72 nm


Modo Estado Ver Historial Editor mapa Editor de
RECUPERAR: 14.11.2002 20:00:02 (x10)
DB MET SINATLAS
Radar Video: OFF
Escala: 72 nm
Lat: 43:39.734 N
Lon:010:10.448 W
0011 19:33:01 Cargo perdido
003 08:29:55 Lugar del radar 5: Semicírculo B Activado
ID : 3641
Num : PRESTIGE
LAT : 42:18.661 N LON: 009:50.605 W
RUM : 324.7 Grd VEL: 5.3 nds
DIST: 46.854 nm DIR: 137.3 deg
COTA
SHYD6
ZOYG5
JBOG9
DFRD
ETOSYHP
ZIBJ6
SHMMFH
JBUK3
CSCK4Q
CGT9


Modo Estado Ver Historial Editor mapa Editor de
MET
SIN ATLAS
RECUPERAR: 15:11:2002 00:03:02 (x10)
ID : 3641
NOM : PRESTIGE
LAT : 43:57.097 N LON: 010:07.628 W
RUM : 324.7 Grd VEL: 5.3 ndo
DST : - - m TXT: - -
CPA : - - nm TCPA: - - min
DIST: 62.076 nm DIR: 139.8 deg
COD: CAMW6
Lat: 44:14.734 N
Lon:010:57.207 W
0016 23:58:01 GG80 perdido
003 08:23:55 Lugar del radar S: Gonilómetro B Activado
Radar Video: OFF
Escala: 144 nm
EPSS
CATA
ZTBJ6
DF RD
V2KRU
EIDK
EAPC
7TGJ
9HJ6
EATN
V2KH
9HJ5
PBHS
P3DC4
9HJ06
3FOAEBMH
PDJN
RDJN
04/02

TRANSCRIPT OF CALLS TO AND FROM PRESTIGE ON VHF RADIO CHANNELS 16 AND 11

13.11.02

0704 Z

PRESTIGE: Finisterre Traffic, Finisterre Traffic, C6MN6

FT: Prestige, Finisterre, good morning, present position .....

PRESTIGE: Yes Finisterre Traffic, good morning, this is C6MN6

FT: Yes, C6MN6, Prestige, goods morning Sir let me know your position

PRESTIGE: Position, in my GPS, four, three, three, one minutes north, longitude zero zero, nine degrees, four two minutes west

FT: Ok, let me now the present course and speed

PRESTIGE: Present course two one zero and my present speed about eight knots

FT: Ok, Prestige, Ok, last port of call and destination

PRESTIGE: Last port of call Ventspils, Letonia and next port of call Gibraltar for orders

FT: Roger Prestige are you carrying dangerous cargo on board ? IMO classes

Prestige: I have only fuel-oil on board, fuel-oil

FT: Let me now the quantity of the fuel-oil on board

PRESTIGE: Quantity on board fuel-oil seven,seven,zero,three,three metric tons

FT: Ok, sorry confirm seven, seven, zero, three three .... Over.

PRESTIGE: Yes, affirmative

FT: Ok, fuel-oil ah . . . Ok, Prestige that is all for me, thank you very much Sir and stand by, 11 and 16 during the transit, all the best bye

PRESTIGE: Old the best stand by 16 and 11

1426 Z

FT: C6MN6, C6MN6, Finisterre Traffic

CORUÑA RADIO: Hallo Prestige, Prestige, C6MN6, C6 MN6, Finisterre Radio, Finisterre Radio channel sixteen over

FT: Hallo, C6MN6, Prestige, Finisterre Traffic

FT: C6 . . . C6MN6, C6MN6, Prestige . . . . . Finisterre Traffic . . . . mayday

FT: C6MN6 Prestige, Finisterre Traffic

CCR: C6MN6, C6MN6, Prestige, Prestige, this is Finisterre Radio, Finisterre Radio, over . . . . .

PRESTIGE: .... we are ..... over

CCR: Hallo, Prestige, Prestige, C6MN6, I received your distress message, I received your distress message and the position and the position. Over

PRESTIGE: ..... all the stand by now, we are listing too much ..... capsize. Over

CCR: Ok, Ok, stay stand by in channel 16, stand by in channel 16, stand by in channel 16. Over

CCR: Hallo, Prestige, Prestige, Finisterre Radio, Finisterre Radio. Over

CCR: Hallo, Prestige, Prestige, Prestige, Finisterre Radio, Finisterre Radio. Over

CCR: Hallo, Prestige, Prestige, Prestige, Finisterre Radio, Finisterre Radio. Over

FT: Hallo, South bound vessel, south bound vessel, position 42 degrees 58 minutes north, 9 degrees 57 minutes west, Finisterre Traffic

CCR: Mayday relay, mayday relay, mayday relay, this is Finisterre Radio, Finisterre Radio, Finisterre Radio, mayday relay received one digital selective call distress message from ship Prestige, I spell Papa, Romeo, Echo, Sierra, Tango, India, Echo, C6MN6 in position four, two, five, four north, zero, zero nine degrees five four west, I say again the position 42-54 minutes north, 009-54 minutes west, need immediately assistance, no further instructions, no further instructions, ships in the area request immediately assistance, Finisterre Radio at 14 hours 35 minutes UTC

FT: Hallo, Evan Diamond, Evan Diamond, Finisterre Traffic

FT: CNFV, Finisterre Traffic on channel 16

CNFV: Yes, CNFV

FT: Confirm your position is 42 56.8N and 9 57W.

CNFV: That is correct.

FT: OK, Sir, this is Finisterre Rescue Centre, please, please proceed to the approach to the vicinity of the vessel in distress which in position is just .... three nautical miles in your port bow, three nautical miles on your port bow, is this vessel in distress, please proceed.

CNFV: I proceed now, I proceed now.

CCR: CNFV, CNFV, Finisterre Radio, Finisterre Radio. Over.

CCR: Mayday relay, mayday relay, CNFV, CNFV, Finisterre Radio, Finisterre Radio.

CNFV: This is CNFV, I am proceeding to the ship always quarter bow.

CCR: Yes, CNFV, your ship's name is Wallily ? Over.

CNFV: Correct, is correct.

CCR: Yes and eta to distress area ? Over.

CNFV: Half hour, half hour.

CCR: Half hour, ok, thank you, bye.

PRESTIGE: Finisterre Radio, Finisterre Radio, motor tanker ... Prestige. We are waiting for distress rescue. Over.

PRESTIGE: Finisterre Radio, motor tanker Prestige.

FT: Who is calling Finisterre Radio on Channel 16 ? This is Finisterre rescue Centre, go ahead.

PRESTIGE: . . . . Finisterre Radio motor tanker Prestige, we are waiting for the rescue, rescue, we are going to capsize, we . . . . on the water, we are waiting for the rescue, we are about . . . . to capsize.

FT: Yes, we understand, one vessel is two nautical miles from your ship and one helicopter is proceeding, one vessel is two nautical miles from you, and one vessel, one helicopter is proceeding to your position, please switch on radio beacon, emergency radio beacon and . . . . prepare all salvage equipment, such as liferafts and rescue boats, please must be all ready, all rescue equipment.

PRESTIGE: OK, all ready . . . . . prepare rescue operations ..... we are awaiting, over.

FT: Ok, let me know, how many people on board, how many people on board.

PRESTIGE: Twenty seven people on board, twenty seven people on board, over ... . all are ready to the rescue, all are ready to the rescue, this is Chief Mate speaking.

FT: OK, no warring Captain, one vessel is proceeding to you and . . . . two nautical miles and one helicopter is proceeding, maybe in 20 minutes, will be flying over you, don't worry . . . everything is running to help you.

FT: Hello, Wallily, Wallily, Finisterre Rescue Centre.

WLL: Finisterre, this is Wallily.

FT: Hello Wallily, Finisterre Rescue Centre, do you read ?

WLL: Yes, Ok.

FT: Ok, do you see the vessel in distress ?

WLL: .....it is forward now, I see, maybe stop now.

FT: Ok, Sir you can proceed to the vicinity on the vessel in distress in order to help, to help the crew, because they inform the vessel is capsize, almost capsize, please proceed to the vicinity and try to help the crew.

WLL: I proceeding to the vicinity and await instructions from you.

14.52 Z

WL: Finisterre Traffic, Wallily

FT: Wallily, go ahead.

WL: I am 2 miles from the ship . . . .

FT: Ok, how do you see the tanker, the vessel, how is the situation of the tanker ?

WL: Still afloat, but have big list, big list.

FT: Ok, understood, she have big list, Ok, proceed to the nearest you can be and please try to help the crew for rescue.

WLL: You can not communicate with .....

FT: We have communicate with them about few minutes ago but I don't know now.

WLL: Ok, I going near, I can and .....

FT: Ok, Sir.

WLL: Thank you.

FT: Ok, for your information Sir, two helicopters are proceeding to the area and expected in about 30 minutes to be fly over you and over the vessel in distress.

WLL: Ok, understood.....

14.57 Z

FT: Prestige, Finisterre Traffic, Finisterre Rescues, Finisterre Rescue Centre calling, do you read ?

FT: Prestige, Prestige, prestige, Finisterre Rescue Centre, do you read ?

15.00 Z

FT: Wallily, Finisterre Traffic, go ahead.

Wallily: .....the ship about ..... little bit smoke coming from the engine room and the radar still running

FT: Excuse me Wallily, please say again your message.

WLL: The ship is about half mile distance of me and little smoke coming from the engine, about navigation apparatus I see radar still working, still working radar.

FT: OK, understand, understand, you are about ..... Ok understood, Sir, please try to contact with the crew because that don't reply us, try contact you the vessel Prestige.

WLL: Prestige, Prestige, this is the ship ..... do you read me ?

WLL: Finisterre Traffic, this is Wallily.

FT: Could you tell me how much is the list, how many degrees is the list of the Prestige.

WLL: Ok, ... because .... I don't exactly, maybe 25, 25 about.

FT: Ok, understood Sir, and please let me know if the crew remain on board or is in the water ?

WLL: .....

FT: Yes, yes I read loud and clear, go ahead.

WLL: .....

FT: No Sir, we don't read the Prestige, we don't read the Prestige, please pass the message..... Give us the message of the Prestige.

WLL: .....

FT: Ok, I understand that the crew is in the raft on the port side of the vessel, Ok, please approach you must do can do safely and please stand by because one helicopter is about 20 minutes from there, the helicopter will be there in 20 minutes more or less Ok.

WLL: I am waiting behind ..... the Prestige .....on starboard side.

FT: OK Wallily

15.10 Z

FT: Wallily, Finisterre Traffic.

FT: Wallily, Finisterre Traffic.

WLL: Finisterre Traffic ..... Can not come on board to the ship, because they need the assistance may be helicopter ..... the lifeboat, starboard lifeboat is broken, may be ..... is not in the correct position.

FT: Ok, understand the starboard lifeboat has broken, Ok Sir understood Wallily, Ok don't worry because in 20 minutes the helicopter will be there and I think they can rescue all the crew.

WLL: I see the crew maybe in the port side, all the crew may be on the port side.

FT: Ok, Ok Wallily you can remain there in the vicinity in case you can help for evacuate the crew and the helicopter will transfer the crew to you vessel, I don't know exactly how the manoeuvre will be, but in case the helicopter need to put the crew in you vessel, you must remain in the vicinity of the vessel in distress, ... Ok, thank you for information.

WLL: I am in the area, I am stand by in the area awaiting because .....

FT: Ok.

15.19 Z

FT: Salvamento Finisterre.

PESCA I: Adelante para Pesca I

FT: Oye mira, nostros al Prestige no le escuchamos, eh, el único que tiene comunicación con el es el Wallily que está alli en las cercanias, por si quieres pasarle alguna información a través del Wallily podrías hacerlo.

P I: De acuerdo, recibido.

P I: Wallily, Wallily, rescue helicopter Pesca one, do you read me ?

WLL: Rescue helicopter, this is Wallily, go ahead, please.

P I: OK, give me your present position, present position.

WLL: Present position now 42 55 N 009 53.2W

P I: Repeat position please, repeat position.

WLL: Repeat position 42 55N 009 53.2W.

P I: I understand longitude 9 53 W

WLL: I repeat ..... position 42 55 N 009 53W

P I: Ok, Roger, we are estimating 13 minutes, 13 minutes to that position, can you tell me how is the situation now of Prestige ?

WLL: The Prestige now have big list maybe we can see ..... half of the deck, maybe ..... little bit pollution, small pollution behind Prestige and your crew on the portside on the portside, of the crew maybe on the portside they are waiting for the helicopter ..... we are near if necessary.

P I: I read you, I read you very wick, wait until we are close to have more information, wait until we are more close, we are now one three minutes from you.

WLL: OK, I am ..... just starboard, just on the starboard on the Prestige, just on the starboard exactly.

15.22 Z

P I: Prestige, Prestige, this is rescue helicopter Pesca I, do you read me ?

WLL: Helicopter from Wallily, the Prestige received you message but maybe you can't hear she.

P I: Ok, we are now only 10 miles from you and we await, await half mile to give the briefing ..... any way can you give ..... of the ship ..... of the ship around 200 metres, 200 metres ?

WLL: I am now about 2 cables, 2 cables from the ship, because I am little ..... maybe can keep around that.

P I: OK, by now keep that position and them we show, you, show you ....

17.17

FT: Prestige, Prestige, Finisterre Rescue Centre, How do you read ? Over.

PRESTIGE: Loud and clear, loud and clear, but ..... another two still on board.

FT: Ok, Ok, Prestige, I understood that the Captain, Chief Engineer and Chief Mate is on board, by way, I understand your intention is no abandon the vessel. Is that right ? Over. This is to be, you are going to remain in the vessel. Is that right ? Over.

PRESTIGE: Remain on board, remain on board.

FT: Ok, your intention is remain on board. OK be advised, be advised, that a rescue boat, rescue tug boat, is arriving to your position, is just three nautical miles from your position and you can give them the line to be towed. We will appreciate. Is possible ? Over.

FT: Did you copy ? Prestige. Over.

FT: We order you to give, to be towed Sir, because the vessel is in a very, very bad situation Sir. You have to be towed because you are drifting to the Spanish coast. Over.

PRESTIGE: ..... the tug boat receive orders from owners, no from me.

FT: Ok Sir, Ok, be advised, just we, we will oblige you to be towed by the tug boat, because you are drifting to the coast, you are drifting at one mile each hour.

PRESTIGE: Yes, I know, I know, just now the owner prepare to give the order to tug boat to coming to give me assistance.

FT: Ok, the Spanish Authorities, order you, order you to be towed by the tug boat, by the rescue tug boat, that is arriving at this time to your position, you have to be towed by this tug boat, please collaborate with the towed, with the tug boat. Over.

PRESTIGE: Moment, moment, I want talk again with my owner, I want talk ..... again my owner and after give orders

FT: Ok, contact your owner, mean while, but the tug boat is arriving to your position, and the Maritime Authorities oblige you to give the line to be towed. Over.

PRESTIGE: Yes, if received order, be coming on board the crew from the tug boat, the crew from the

tug boat because no crew on board, no to give the ropes to the tug boat. Just a moment, I contact again with my owners.

FT: Ok, you may contact with your owners, go ahead.

19.06 Z

FT: .....Finisterre Rescue Centre calling.

FT: Prestige, Prestige, Finisterre Rescue Centre calling, Over.

PRESTIGE: Station calling Prestige.

FT: Ok Prestige, Finisterre Traffic, Finisterre rescue Centre, OK how do you read ?

PRESTIGE: Loud and clear.

FT: Ok, that's right, Sir, please remain, remain in the next ten minutes in the bridge, because the Maritime Authorities are going to be in touch with you, by means of this system, by means of VHF.

Ok, please stand by one a few minutes, Finisterre Radio will be calling you, and the Maritime Authorities will be in touch with you, will you please be, will you please remain in the bridge for the next ten minutes ? Over.

PRESTIGE: Yes, I am stand by continues in the bridge, because waiting tug boat, waiting tug boat to receive the vessel on here.

FT: Ok, thank you, Sir, in few minutes we call you back, the Maritime Authorities will call to you directly, Ok, thanks a lot Sir, bye, bye.

PRESTIGE: I am stand by, I am stand by on the bridge.

19.35 Z

FT: Hallo, Prestige, Prestige, Prestige, Finisterre Traffic.

FT: Prestige, Prestige, Prestige, Finisterre traffic Calling. Do you read ?

PRESTIGE: Yes Finisterre Traffic good evening .....

FT: Good evening Prestige, please go down to channel 11, channel one one.

PRESTIGE: Eleven.

FT: Hallo Prestige Finisterre Traffic on channel 11.

19.36 Z

PRESTIGE: Finisterre traffic, Finisterre traffic, tanker Prestige.

FT: Okay Prestige, I call because I need to inform you that we just received a telex..... fax from your owner and you must contact as soon as possible with your principal, your owner, because they agree to make fast a tug with the Ria de Vigo, but in order to confirm this, you have to contact with the owner as soon as possible.

PRESTIGE: Roger, roger, roger, Finisterre Traffic, ok I contact now just a moment with my owner.

FT: Ok, Roger.

19.36 Z

PRESTIGE: Stand by please one six again.

FT: Yes please, one, six.

19.56 Z

PRESTIGE: Finisterre Traffic, Finisterre Traffic, Prestige.

FT: Yes, Prestige this is Finisterre Traffic channel 11, one, one please.

PRESTIGE: One, one.

20.01 Z

FT: Prestige, this is Finisterre Traffic, go ahead.

PRESTIGE: Good evening again, yes, is ok, the owner agree to coming the tug boat to, but must be to coming on board may be crew members from tug boat to give assistance to the, to the ..... to make fast the vessel.

FT: I don't know, I am not sure if the crew of the tug boat can go to the ..... but stand by one moment, standby ..... let me know first of all if you have value the damages in your ship ?

PRESTIGE: Ah..... just moment..... may be broken one bulkhead because the vessel, few minutes, few minutes, ten minutes, listing to starboard 22 degrees, ten minutes, but exactly ..... because the heavy sea coming on board the sea water.

FT: Yes, I understand that you think the problem is have broken a bulkhead and please let me know if the bulkhead was between the tank of crude and ballast tank ?

PRESTIGE: The first opinion, the first opinion is broken bulkhead between the 3 center and 3 deep tank, empty tank, because ..... ten minutes only, ten minutes the vessel listing to starboard 22 degrees.

FT: Ok, Ok, please contact with Ria de Vigo which is just at your position near, in vicinity of you and try to agree the type and time of ..... tug you need.

PRESTIGE: Ok, gentlemen, Ok gentlemen must coming to give assistance the tug boat because only on board the Captain, Ch. Mate and Ch. Engineer ..... three on board now ..... but is coming on board from the tug boat and I sign to receive money from the owners.

FT: Ok, the tug boat, I think is listen on this channel, call Ria de Vigo.

23:43 Z

FT: ..... motor tanker Prestige, this is Finisterre Rescue Centre, a question: Tell me please how many liferaft remain on board or how may liferaft have you lost ? Over.

PRESTIGE: Only one life raft, we lost ..... but we lost only one liferaft during the standby when the rescue, eh.

FT: Well understood, only you have lost one liferaft, understood. Second question, tell me please why you can not proceed to arrange the emergency towing wire on your forecastle, what kind of problem have you got to prepare, to arrange the emergency towing wire ? Over.

PRESTIGE: Yes sir, we try many times, but we can not manoeuvre due to very bad weather and the messenger line was cut, so, we try, we try again, because of the very bad conditions. Over.

FT: Please go to the forecastle, go to the forecastle, to help, to help in the manoeuvre towing operation, Sir.

PRESTIGE: Yes, Ok now, after few minutes, to make, make tug boat fast, after may be ten minutes, five minutes will be ready to make fast forward the tug boat.

FT: Captain, please go immediately to the forecastle, and help the men which are working there, with the cable. Over, go to the forecastle and help the men which are at the forecastle at the fix the cable. Over.

PRESTIGE: Please, repeat because no loud and clear, no loud and clear, coming one, one.

FT: Cannel one, one.

05:19 Z

FT: Hola, Prestige, Finisterre Traffic. Do you read ?

PRESTIGE: Yes, loud and clear now.

PRESTIGE: Finisterre Traffic, Finisterre Traffic, Prestige.

FT: Yes, Captain, the men in your forecastle need assistance to put on the bit the towing line. They need you and the Chief and the Engineer, the Chief Engineer. They need two hands more in order to put the towing line on the bit. Please assist the men on the forecastle, Sir.

PRESTIGE: Yes, now proceed forward the Chief Engineer to give assistance also, proceed forward.

FT: Please immediately. Over.

PRESTIGE: ..... forward.

06 08Z

FT: Hallo Prestige, Prestige, Finisterre Rescue Centre, channel 16, do you read ? Over.

FT: Hallo Prestige, motor tanker Prestige, Finisterre Rescue Centre channel 16, do you read ? Over.

PRESTIGE: Station calling Prestige, channel one, one.

FT: Yes, change to channel one, one please.

PRESTIGE: Station calling Prestige.

06:13 Z

FT: Prestige, this is Finisterre Rescue Centre, good morning, we have information that there are four peoples of your crewmembers, ready to return to your vessel, and the people are the Second Engineer, the Electrician, the Pumpman and one Oiler. Are this four people enough to assist the Chief Engineer to start the main engine ? Over.

PRESTIGE: Ok, Ok I am waiting to coming on board this some people. After how many hours coming ?

FT: No, Sir, please listen my message, listen my message. There are four people, this people is ready, is ready to embark in your vessel, to come back to your vessel. The question is if the Chief Engineer has enough with this four people to start the main engine, please ask Chief Engineer if consider he can start your main engine with the assistance of the Second Engineer, the Electrician, the Pumpman and one Oiler. Over.

PRESTIGE: Ok, Ok. I am waiting to coming. I am waiting to coming.

FT: Yes, please ask the Chief Engineer.

PRESTIGE: Yes, moment.

PRESTIGE: Station calling Prestige
Station calling Prestige.

FT: Yes Prestige, this is Finisterre Rescue Centre, go ahead Sir.

PRESTIGE: Coming the Second Engineer, Electrician, one Oiler and Pumpman, no coming third Engineer ?, because also to have two third Engineers.

FT: Then the Chief Engineer need two Officers two Engineer Officers ?, that is correct ?

PRESTIGE: That is coming the Second Engineer, third Engineer and one Oiler correct ? And Electrician correct ?

FT: Hallo Prestige, I say again, only there are four people to come back to your vessel, that people are the Second Engineer, the Electrician, one Oiler and the Pumpman. Over.

PRESTIGE: Is Ok, is coming this one, is coming this one give assistance to the Chief Engineer.

FT: Hallo, that people are ready to come back, let me know please if that people are enough to assist your Chief Engineer to start the main Engine ? Over.

PRESTIGE: ..... Is better to coming also one Third Engineer, is better to coming also Third Engineer, five people coming on board.

FT: Then you need one more person, do you need the Third Engineer, is that affirmative ?

PRESTIGE: Ok, Ok, Ok, if no coming is Ok, Ok, coming this some four people.

FT: Hallo, Sir, please listen my message, that no ready a Third Engineer, just only This four people are ready to come back, only this four people, we must know if are enough to assist to start the main engine, tell me please that people are enough to start the Engine ? Over.

PRESTIGE: I explain, to this Chief Engineer, I explain this to Chief Engineer. Is Ok is no coming another one, coming this one.

FT: Then, please confirm, are enough this four people ? Over.

PRESTIGE: Yes, Ok, copy.

FT: Ok understood, is enough your ..... four people, Ok thanks Sir.

PRESTIGE: Yes is coming this one to give assistance to Chief Engineer, but, is just not exactly start or no main engine.

FT: Yes, we know Sir, we know, but we must try, we must try.

PRESTIGE: OK, this one try, anyway try, anyway try.

PRESTIGE: ..... Copy me, anyway try, anyway try, starting ..... anyway try.

FT: Yes, understood. we are now calling with the people in order to embark on the helicopter and come back to your vessel and try with your Chief Engineer to start again the main engine. ok ?

FT: Yes, the question Prestige, question, tell me have you got, have you got already prepared on your deck, the wire, the emergency towing wire, have you the wire or the cable ..... on your deck ? Over.

PRESTIGE: Don't have any emergency wire forward, we have at stern, we have at stern only, but very big and we are only three persons on board remain, the Captain, the Chief Mate and Chief Engineer and Sir is very dangerous to connect the towing wire, because is the heavy sea may be .....

FT: Yes well understood, you got only emergency towing wire on the aft and due rough seas working in your stern you cannot proceed to your poop in order to prepare the emergency towing line, well understood, understood also that you have not any emergency towing wire on your forecastle, please confirm. Over.

PRESTIGE: Yes confirm, Ok, we have only the ..... chain, but we don't have any towing wire forward Sir.

FT: Yes well understood hallo Prestige, Finisterre Traffic, question, what kind of problem have you got to start your windlass, your windlass on castle in order to heave up the lines from the tug boat, what kind of problem have you got on your windlass, have you any electrical problems, electrical power problems ? Over.

PRESTIGE: The windlass working by steam, the boilers stopped, I explain to the tug boat to give one messenger rope to coming the panama chock and back to the tug, heaving by towing, but the tug no have messenger ropes, no have something to prepare ..... the tug boat wire.

FT: Understood your windlass is steam, you have not steam, then you can not use the windlass ..... Ok Prestige, I inform you we will proceed to tug boat ..... we proceed to pick up two members from ..... rescue boat by helicopter and ..... will..... two persons on your forecastle in order to help you to make fast the main towing line from the main tug vessel and thanks Sir for your information Sir, we are keeping watch in channel 16, 11 and 06. Search and rescue ..... this channel. Thanks Prestige, bye.

PRESTIGE: Is Ok, Ok but maybe coming another one tug boat, may be coming another also tug boat because the vessel just now drifting east northeast just now distance for the shallow waters about, about 18,5 miles.

FT: Yes also can you estimate more or less what is your maximum draft in your present condition ? Over.

PRESTIGE: Now big draft, big draft because ..... the permanent ballast full water, may be I check by computer I calling later to give, anyway ..... may be, may be 16 meters, maybe 16 meters draft.

FT: Yes understood maybe 16 meters, one, six meters on your starboard side, well understood, thanks Prestige, bye.

PRESTIGE: Is Ok but if coming the helicopter with two peoples to give assistance to tug boat and to make fast the forward, Ok as soon as possible quickly.

FT: Yes the helicopter underway few minutes will reach your position and then first of all will pick up crewmembers from the rescue boat approaching your position and the new rescue boat then he will translate this two persons on your forecastle and two seamen and aid you to recover the tug line. Over.

PRESTIGE: Ok, roger, roger, I awaiting.

FT: Ok all the best.

PRESTIGE: They working with tug boat in channel 06, working with the tug boat with walk talky in channel 06.

FT: Ok understood, search and rescue channel 06.

14.11.02

00 10Z

RV: Prestige, Prestige, Prestige tug boat Ria de Vigo calling. Do you read me ? Over.

FT: Prestige, Prestige this is Finisterre Rescue Centre on channel one, six. Do you read ? Over

RV: Prestige, Prestige, Prestige tug boat Ria de Vigo calling, Do you read me ?

PRESTIGE: Finisterre, Prestige.

FT: Prestige, please answer the tug boat Ria de Vigo there are calling you. Over.

PRESTIGE: Ok.

05 13 Z

FT: Hallo Prestige, Prestige, Finisterre Traffic channel 16, do you read me ? Over.

PRESTIGE: Finisterre Traffic, Prestige, go ahead.

FT: Yes Prestige, we need one more man one more person in the forecastle to help in the operations of the towing Sir. Over.

PRESTIGE: Please repeat because are not loud and clear.

FT: Prestige, Finisterre. I say again, we need another person more in the forecastle to help in towing operations Sir. Over.

PRESTIGE: Yes, yes, coming ..... after two minutes make fast the tug boat.

FT: Say again, Say again. Over.

PRESTIGE: Ok, thank you.

FT: Prestige, Finisterre calling you, say again your message Sir. Over.

FT: Prestige, Prestige, Finisterre Traffic, do you read me ? Over.

FT: Prestige, Prestige, Finisterre channel 16, do you read me ? Over.

FT: Idem

FT: Prestige, Finisterre Traffic, do you read me ? Over.

PRESTIGE: Finisterre Traffic, Finisterre Traffic, Prestige.

FT: Prestige, Finisterre Traffic. One question, what about your engine, your engine is work ? Over.

PRESTIGE: Yes, yes., no crew on board, no crew on board to start, to start, to working the engine, no crew on board.

FT: Well understood ..... we need a person or two person, you Captain or Chief Engineer. We need on the forecastle to help in the maneuver of towing line. Over.

PRESTIGE: Yes, after few minutes .....may be fast the tug boat. After few minutes make fast the tug boat.

FT: Please Captain, go to the forecastle to help the other people. Over.

PRESTIGE: Please repeat.

PRESTIGE: Ok, Ok, copy.

FT: Ok, thanks, Finisterre listening on 11 and 16.

16 50 Z

PRESTIGE: Finisterre Traffic, Finisterre Traffic, tanker Prestige calling, tanker Prestige calling. Coming please.

FT: Tanker Prestige please switch channel 11, channel one, one. Please.

PRESTIGE: Channel one, one.

17 03 Z

FT: Motor tanker Prestige, good evening again, go ahead. Over.

PRESTIGE: Just now, just now, present position now 43-26.6N 9-38.1W, who is going now ? must be change the course to the west 270.

FT: No, no, no, you must. you must comply with the information about the Spanish Authorities, in you must keep this course more or less and change the speed. Over.

PRESTIGE: Just a moment, just a moment.

PRESTIGE: ..... the course now 320, 320 the course now.

PRESTIGE: Finisterre traffico ..... tanker Prestige.

FT: Sorry Sir, please, you must, you must maintain, maintain the course and speed, you must maintain the course and speed. Over.

PRESTIGE: The course now 320, 320, the speed about 7 miles.

FT: Ok, you must continue, continue with the course and speed, this course and this speed. Over.

PRESTIGE: Yes traffico, but is going to the, to the bay the Gulf of Biscay, again.

18:57 Z

FT: Prestige, C6MN6, Finisterre Traffic, calling.

FT: Attention, motor tanker Prestige, motor tanker Prestige, C6MN6, Finisterre Traffic calling.

FT: Hallo, Prestige, Finisterre Traffic, good evening, well, please check your radiobeacon, because we are receiving a distress signal in your position and ..... proceeding from your vessel, so check the radio beacon and call us back, please. Over.

PRESTIGE: OK, I check ..... the epirb may be in start in manual ..... yesterday.....OK. I check and I call you back.

FT: Roger, because we are receiving alert from a radiobeacon in your position and call us back, please. Over.

18 58 Z

FT: Motor tanker Prestige, motor tanker Prestige, Finisterre Traffic calling. Over.

PRESTIGE: Yes Finisterre Traffic, motor tanker Prestige.

FT: Motor tanker Prestige, Finisterre Traffic channel 11, one one.

PRESTIGE: One, one.

19: 05 Z

FT: Hallo Prestige, Finisterre Traffic, go ahead, please.

PRESTIGE: Sir, we check around, we don't have any beacon ..... yesterday..... Over.

FT: Yes we are receiving now the radiobeacon signal, radiobeacon signal in approximate position too near your position, eh .... near exactly your position. Over.

PRESTIGE: Ok ..... we don't have any beacon ..... Over.

FT: Ok, thank you, have you checked the radiobeacon, is all right ? Over,

PRESTIGE: Roger.

FT: OK, Prestige, keep watch on channel 16 and 11. Over.

APPENDIX J

Salvors Reports etc

- Undertaking given by Salvors
- Smit Chronology
- Salvors request for a place of refuge

Ante mí, D. Angel del Real Abella, Capitán Marítimo de A Coruña, el Capitán WYTSE H. HUISMANS, Capitán de la Marina Mercante Holandesa, perteneciente a la empresa Smit Salvage y que procederá a tomar el mando del buque de bandera de Bahamas "Prestige" por orden de su armador, **se compromete**:

A no estar nunca a menos de 120 millas náuticas de las aguas jurisdiccionales españolas o donde España ejerza jurisdicción. En todo este trayecto estará escoltado por buques de la Armada Española que impedirán su acceso dentro de las 120 millas antes mencionadas.

Asimismo, contará con el apoyo de un buque de salvamento de Sasemar para facilitar la operación de trasvase de la carga y la seguridad del personal embarcado.

Lo que se pone en su conocimiento, ante el representante de la Consignataria española Ceferino Nogueira para dar fe de que el Capitán antes mencionado comprende en todos sus términos dicho escrito.

A Coruña, 14 de noviembre de 2002

Fdo.: Cap. WYTSE H. HUISMANS Fdo.: Rep. Ceferino Nogueira

Fdo.: Angel del Real Abella

FREE TRANSLATION

Before me, Mr. Angel del Real Abella, Master of La Coruña, an appearance was made by Capt. WYTSE H. HUISMANS, Foreign Going Master of the Dutch Merchant Navy, who belongs to the company called Smit Salvage. On the instructions of the ship-owner, he is due to take command of the "Prestige", a ship which flies the flag of the Bahamas. **He makes the following undertaking:**

- Always remain at least 120 nautical miles from waters in Spanish jurisdiction or over which Spain exercises jurisdiction. Throughout this route, the ship will be escorted by the Spanish Navy, which will prevent it from entering the 120-mile boundary mentioned above.

In addition, he will be able to count on assistance from a salvage vessel from *Sasemar*, which will facilitate the operation to transfer the cargo and ensure the safety of the crew on board.

The above was notified to him in front of the representative of the Spanish Shipping Agent, Ceferino Nogueira, to attest that the above-mentioned Captain understands all the terms of this document.

La Coruña, dated November 14th, 2002

Signature
Signed by Capt. WYTSE H. HUISMANS

Signature
Signed by Ceferino Nogueira, Shipping Agent

Signature
Signed by Angel del Real Abella

"PRESTIGE"

Chronology of Events

Weds. 13th November 2002	
	Details of the "PRESTIGE" casualty appear in Lloyds Casualty Reporting Service. SMIT Salvage B.V. awarded salvage contract under terms of LOF 2000. Remolcadores Nosa Terra S.A. ("Remolcanosa") agreed as Co-Contractors, Technosub International as Sub-Contractors
10.40	The Spanish salvage tug "RIA DE VIGO" (Remolcanosa owned) received instructions from Finistere Traffic (Spanish Maritime Authority) to leave Mauros, Northwest Spain.
15.30	"RIA DE VIGO" received instructions to proceed to the casualty "PRESTIGE" in latitude 42° 50.1' North, 010° 32.5' West. During the afternoon the casualty's crewmembers are airlifted off the vessel by helicopter with the exception of the Master, Chief Engineer and Chief Officer and other key personnel. Weather conditions reported as severe.
18.00	"RIA DE VIGO" in attendance near the casualty.
21.05	"RIA DE VIGO" attempted to establish a towing connection to the casualty.
Late-PM	SMIT Salvage Master (Wytse Huismans) received a call from Kees Van Essen, SMIT's Operations Manager in Rotterdam, with basic information about the "PRESTIGE". The situation was described as a fully laden tanker in difficulty in violent storms near the Galician coast off Spain. Preparations were underway to assemble a suitable salvage team. SMIT made arrangements for a "dyneema" (special floating tow wire) to be delivered to La Coruna, Spain.
Thurs 14th November 2002	
01.40	Sasemar (Spanish Search and Rescue Service) personnel and material from the vessel "IBAIZAL UNO" transferred onto the casualty by helicopter.
02.20	Sasemar personnel assisted with connecting the towline from the

	casualty to the "RIA DE VIGO".
04.00	SMIT Salvage Master catches flight from Rotterdam Airport to La Coruna. SMIT Salvage Master is accompanied by his team consisting of one salvage foreman, two salvage engineers and one salvage diver, together with salvage equipment including gas detectors.
08.30	The fourth attempt by the "RIA DE VIGO" to connect up to the casualty failed. Weather conditions remained severe.
08.50	The Remolcanosa tug "CHARUCA SILVEIRA" connected up to the casualty with 650 metres towline.
09.15	The Remolcanosa tug "SERTOSA TRIENTA Y DOS" connected to the casualty.
09.35	"CHARUCA SILVEIRA" parted her towing line.
09.40	Tugs were reported to be having great difficulty performing the tow due to severe weather and the tow wire repeatedly breaking. The casualty is reported to be 7 miles offshore
09.45	Sasemar personnel embarked the casualty by helicopter.
10.25	The fifth attempt by "RIA DE VIGO" to connect up failed.
11.35	Sasemar personnel again attempted to establish connection to the casualty with the "RIA DE VIGO".
12.15	Casualty stopped drifting.
12.40	"RIA DE VIGO" connected to the casualty in position 43° 03' North, 009° 20' West with 645 metres of towline.
14.15	The SMIT salvage teams arrive at La Coruna Airport, transferring to their agent's office in La Coruna.
14.35	The salvage team requested permission to take helicopter transportation to the casualty's location.
	SMIT Salvage Master telephones the casualty and speaks with the Master to establish the extent of the damage to the vessel and whether there was oil pollution.
17.20	The salvage team received clearance to fly to the casualty.
17.30	SMIT salvage team departed the agent's office for the heliport for transfer to the casualty. Confirmation received that the dyneema

	special floating tow wire was being delivered to La Coruna by charter plane.
18.00	The SMIT Salvage Master received a telephone call from the Spanish Coastguard enquiring as to his intentions. The SMIT Salvage Master confirmed that the priority was to board the vessel to assess the casualty.
18.10	SMIT's agents received a telephone call from the La Coruna Harbour Master's office saying that SMIT would have to sign a letter confirming that it was their intention to remove the casualty beyond Spain's 120 nautical mile territorial zone as a matter of priority. SMIT were informed that the Harbour Master's office would not give clearance to board the helicopter until such time as the letter has been signed.
19.00	The SMIT Salvage Master signed the document at the heliport in the presence of the La Coruna Harbour Master.
19.40	The SMIT salvage team received permission to fly by Coastguard helicopter to the casualty. Confirmation is received that the dyneema high performance towing line has arrived at La Coruna Airport from Rotterdam and is to be transferred directly to the casualty. At the same time the salvage team are advised that the helicopter originally intended to transfer them to the casualty is not suitable for the job because it does not have auto-hover capability. The SMIT agent advised that the Spanish Coastguard were attempting to locate a better helicopter with an auto-hover capability.
21.30	The SMIT Salvage Master advised that the salvage team has final permission to board the helicopter and fly to the casualty.
21.33	The helicopter pilot received telephone instruction from an unknown party stating that the planned flight to the casualty was to be cancelled. The Salvage team booked themselves into a hotel for the night and met with a four man Salvage team from Technosub who had travelled from Tarragona. The SMIT salvage teams were aware that the tugs connected up were now towing the casualty in a north-westerly direction into the weather at the insistence of the Spanish authorities.
Fri 15th November 2002	
00.30	The SMIT salvage team received a telephone call from their agent advising them to proceed to the airport immediately since the planned helicopter flight to the casualty had received authorisation.

01.50	The nine man salvage team boarded the Coastguard helicopter and flew to the casualty. The weather conditions noted to be wind Westerly force 3-4 with a swell of 4-5 metres. The salvage team consisted of four Technosub engineers to operate the dyneema high performance towing line and five SMIT personnel, including the Salvage Master.
02.50	The helicopter arrived at the casualty's location. The Salvage Master's initial observations were that the vessel was taking considerable spray onto her starboard side and appeared to be deep in the water. Other than that it was not possible to survey the damage.
03.20	The salvage team winched onboard the casualty one at a time onto the stern. No assistance from the casualty's crew was rendered.
03.40	The transfer of the salvage team and their equipment safely onto the casualty completed. The salvage team proceeded to the casualty's bridge. The following crew members of the casualty remained onboard :- 1. The Master 2. The Chief Engineer 3. The Chief Officer 4. The Second Engineer 5. The Third Engineer 6. The Oiler 7. The Pumpman 8. The Electrician. The Master and the Chief Engineer were noted to be Greek and the remaining crew was Filipinos. The Chief Officer confirmed that No. 3 Port ballast tank had been ballasted by the casualty's crew in order to reduce the starboard list.
04.00	"RIA DE VIGO" and the "SERTOSA TRIENTA Y DOS" were connected to the casualty forward and the tug "CHARUCA SILVEIRA" acted as standby vessel. The casualty was noted to be on a heading of approximately 315°(T). The deck lights were on and it was possible to make an initial assessment of the damage. The Salvage Master noted severe damage in the area of No. 3 Starboard ballast tank and there were a number of Butterworth plates on the deck that had been blown off through hydrostatic pressure. It appeared that No. 2 and No. 3 Starboard ballast tanks had become common to the sea. There was no indication of oil pollution. No. 2 Starboard ballast tank also believed to be tidal.
04.15	The salvage team returned to the bridge to obtain a copy of the General Arrangement Plan to plan the salvage operation. The Chief Officer confirmed that the cargo was fuel oil as opposed to crude oil.

	However, none of the crew was able to satisfactorily explain the disposition of the casualty's bunkers. From visual inspection it was clear that No. 2 Starboard and No. 3 Starboard ballast tanks were breached and, therefore, the only ballast was located in No. 3 Port. The Salvage Master believed that No. 2 Port may also have been ballasted by the crew to try to correct the list, which was by now approximately 2-3° to starboard. The vessel's condition was bearable with heavy rolling but not excessive pitching. The casualty's main engine was not running. The vessel remained under tow in a north-westerly direction and the Salvage Master noted that although the vessel was reasonably stable it was obvious that the hull was being subjected to intense strain.
04.30	The SMIT Salvage Master called the tug "RIA DE VIGO" on VHF and was advised that the tug had sustained severe damage on her starboard quarter during the process of connection to the casualty and she was only able to turn to port or continue straight ahead. In order to turn the casualty into a Southerly heading away from French and British waters the "SERTOSA TRIENTA Y DOS" was used to maintain steerage and assisted the convoy in making a long slow turn to port onto a course of 230° (T).
05.15	The GA Plan requested by the SMIT Salvage Master arrived on the bridge and by comparing observations to the drawings it was clear that No. 3 Starboard ballast tank was damaged and possibly also No. 2 Starboard ballast tank as well as No. 4 Starboard cargo tank. The Master again confirmed that No. 3 Port ballast tank had been flooded to sea level in order to remove the starboard list. The Chief Engineer confirmed that the vessel had no starting air remaining so the main engine could not be run and the generators could not be restarted in the event that they tripped.
05.30	The casualty's Chief Engineer advised the SMIT Salvage Master that the casualty did not have any spare blank Butterworth flanges. At this stage water was noted to be in the lower corridors of the accommodation block dripping down onto the generators in the engine room. By controlled opening of doorways and hatches the salvage team were able to flood the water down into less dangerous spaces. The Salvage Master asked the attending tugs to provide a small electrical pump to pump water out of the accommodation.
06.40	The SMIT Salvage Master spoke with the Master of the "RIA DE VIGO" and was advised that the damage to the stern could not be repaired at sea. The Salvage Master realised that a replacement tug was needed and relayed this to the SMIT team ashore at La Coruna, who started looking for an appropriate replacement. The Salvage Master also instructed the salvage team to look into the possibility of restarting the main engine should it be required in the future. The Spanish Navy warship "BALEARES" was in attendance and circling the casualty at a distance of approximately 3 miles. It

	would appear that the Spanish Navy had overheard a conversation on the VHF between the SMIT Salvage Master and the two tugs and offered the use of a small pump. They advised that it would be brought over by zodiac at 09.00. In the event this was never provided.
07.10	The SMIT Salvage Master requested twenty inflatable lifejackets and twenty immersion suits to be delivered to the vessel as soon as possible. Additionally a replacement tug was requested to replace the damaged "RIA DE VIGO". At the same time the SMIT Salvage Master was able to summarise the damage on the casualty as follows:- No. 2 Starboard ballast tank was breached and common to the sea; No. 3 Starboard ballast tank was breached and common to the sea and the whole of the side shell plating was missing from this tank. Various Butterworth holes were without covers and No. 4 Starboard cargo tank was venting through the Butterworth holes. Damage was suspected in No. 3 Centre cargo tank which was possibly leaking oil through No. 3 Starboard ballast tank which was open to the sea. The damage to the starboard side extended over 30 metres and was worsening. Despite the crew's efforts to ballast No. 3 Port ballast tank the vessel was rolling constantly and it was thought that sheltered waters on the Spanish coast might be the best place for the vessel to undertake a ship to ship transfer operation. Given the deterioration of the vessel's condition the Salvage Master formed the view that this was almost certainly the only way the ship and cargo could be saved.
07.30	A better assessment of the damage was possible at daylight and in general terms the initial assessment was correct. The deck was flexing because the structural strength in the tanks had completely gone. There was no evidence of impact damage. It was clear that the damage was progressive and the shell plating was breaking up and the damage was moving aft. The severe rolling of the ship was causing pollution from the damaged cargo tanks and it was therefore considered a priority to get the vessel into sheltered waters to minimise pollution.
07.45	The main deck was found cracked in the way of no.2 and no. 3 tanks.
	The SMIT personnel ashore in La Coruna decided to arrange an early meeting with the Spanish authorities to see whether the vessel could be brought into sheltered waters. The obvious candidate was La Coruna Bay. The weather conditions were noted to be worsening with the wind force 7-8 from the West and a heavy swell of 6-7 metres. Consideration was given to alternatives if the Spanish authorities refused to allow the vessel to enter a sheltered port/anchorage. The Salvage Master considered the Cape Verde Islands but doubted that the vessel had sufficient structural strength to make it that far.

08.27	Situation report stated that convoy is about 60 miles off the coast of Spain.
09.00	The SMIT salvage team managed to locate spare covers onboard to blank the open Butterworth holes. Instructions were given to the salvage team to fit the covers to the holes that were not venting. It was too dangerous to attempt to fit flanges to holes that were venting.
09.10	SMIT (via their Spanish agents) send a formal request to the Director General of the Spanish Marine Mercante for the casualty to be allowed to enter a port of refuge where a ship to ship transfer of cargo can be undertaken under controlled conditions.
11.00	The SMIT Salvage Master spoke to the Master of the "RIA DE VIGO" and asked him to prepare a 60mm wire pennant to be transferred later during the day by helicopter from the tug to the foc'sle of the casualty. The intention was to adjust the towing arrangement at the bow and replace the pennant, which had become damaged. It was hoped that this would alleviate the difficulties that the tugs were having in maintaining steerage. The dyneema high performance towing line would have been the preferred option in this particular situation but there was no way of getting it out to the casualty in time.
12.00	The SMIT salvage team requested a further fifteen blank Butterworth covers to fit onto the vessel. It was reported that the tug "ALONSO DE CHAVES" was proceeding towards the casualty under the direction of the Spanish Government and would arrive on site the same evening. At the same time a meeting had been called ashore by the Spanish authorities to discuss the situation. During the meeting the SMIT Salvage team ashore repeated their request for a port of refuge or other safe area, but this request was denied and SMIT were again instructed to take the vessel 120 miles from the Spanish coast. The Spanish Government confirmed that the Navy would be used to ensure the convoy remained outside Spanish territorial limits.
13.00	In view of the appalling weather conditions and the deteriorating structural condition of the casualty the Salvage Master decided to reduce the salvage team and the remaining crew onboard the casualty. The weather conditions were forecast to deteriorate further. The Salvage Master intended to remain onboard with the Dutch salvage team and the casualty's Master, Chief Engineer, Chief Officer and Second Engineer. Arrangements were made to transfer the balance of the salvage team and the crew ashore.
13.30	The salvage team onboard the casualty located the emergency towing arrangement and started to rig it with the intention of using it

	connect up the tug "ALONSO DE CHAVES" which was en route to the casualty.
14.00	The SMIT Salvage Master spoke with the SMIT Naval Architect in Rotterdam and they discussed the possibility of pumping out No. 3 Port ballast tank. The Naval Architect advised that although it was technically possible to do this it would increase the starboard list and put the main deck at more risk of damage from the heavy seas. The Naval Architect had run a test on a model of a tanker very similar to the casualty and in his opinion approximately 55% of the vessel's longitudinal strength was gone and it was surprising that the vessel had not started to break up. At the same time SMIT Salvage ashore contracted the Global Towing Lines (GTA) tug "DE DA" and ordered her to proceed immediately to the casualty's assistance and she was due on site early on 18th November.
14.10	The tug "CHARUCA SILVEIRA" connected up with the damaged tug "RIA DE VIGO" to assist her to maintain steerage. The result of this redeployment of tugs was that the casualty was able to maintain a Southerly heading more easily.
16.00	A sudden change in the weather occurred and the casualty was now experiencing large waves rolling over the foc'sle and main deck. It was now too dangerous to go on the main deck. The swell had increased to in excess of 6 metres and the wind was storm force 8-9 in squalls. The "RIA DE VIGO" reported that it would not be possible to transfer the pennant from the "RIA DE VIGO" to the casualty using a helicopter because it was too heavy. Due to the waves rolling over the main deck there would be no further opportunity to adjust the towing arrangement on the bow.
16.10	The SMIT Salvage Master called the "RIA DE VIGO" on VHF and asked them to contact the Spanish Coastguard to make arrangements for the immediate evacuation of the remaining crew and salvage team for the night.
17.30	The remaining salvage team and the casualty's crew were evacuated by helicopter.
18.30	The salvage team and casualty's crew arrived at the heliport in La Coruna at which point the Master and Chief Engineer were arrested by Spanish Police.
20.00	The Salvage Master learned that the tug "ALONSO DE CHAVES" had arrived on site but had parted the messenger from the emergency towing system when trying to connect up astern. The "SERTOSA TRIENTA Y DOS" had also lost the bow connection. The Salvage Master arranged for a helicopter so that the salvage team could return to the casualty at 08.00 the next day.

Sat. 16th November 2002	
08.00	The full nine man salvage team arrived at the heliport in preparation for being transferred to the casualty.
09.40	The salvage team departed for the casualty.
09.25	The helicopter arrived on site. The weather conditions remained severe, winds force 8/9 with a swell of 6-8 metres. From the helicopter it could be seen that the "RIA DE VIGO" remained connected up forward and although the convoy was maintaining a southerly heading they were making little or no progress. Both the tugs "SERTOSA TRIENTA Y DOS" and "ALONSO DE CHAVES" had lost their towing connections and these needed to be reconnected as quickly as possible. The Salvage Master and a total of six other salvage team members were winched onboard the casualty. The salvage team immediately went aft to inspect the failed emergency towing arrangement astern. Preparations were made for a new emergency stern towing connection. During the flyover in the helicopter the Salvage Master noted that the condition of the casualty had deteriorated quite significantly. All the main deck plating in way of No. 3 Starboard tank had gone. There would be no opportunity to reconnect the tug "SERTOSA TRIENTA Y DOS" forward because of the waves being shipped over the foc'sle deck.
12.00	The emergency towing pennant was successfully picked up and recovered onto the stern of the tug "ALONSO DE CHAVES". Due to the deterioration in the vessel's condition and the continuing bad weather there was now concern that the vessel might start to break up at any time.
13.25	After two attempts the tug "ALONSO DE CHAVES" was connected up to the casualty.
16.00	Having established the towing connection to the "ALONSO DE CHAVES" the salvage team were winched off the casualty and returned to the heliport at La Coruna. One member of the salvage team had collected certain of the casualty's documents from the Master's cabin prior to leaving the ship. They had also obtained a file with incoming and outgoing communications. The documents were handed to the to the owner's representatives in La Coruna for safekeeping and copies were not taken.

Sun. 17th November 2002	
10.00	Whilst the Salvage Master was at the hotel planning the next stage of the salvage operation and organising transport for the salvage team he was advised that the progress of the convoy had been stopped by the Spanish authorities for reasons which had not been explained. He was advised the "ALONSO DE CHAVES" was now towing the casualty astern and that the "RIA DE VIGO" remained connected at the bow. The large salvage tug "DE DA" was due to arrive at Vigo between 14.00 and 15.00 hrs the same afternoon. The Salvage Master decided that it was essential to have trained salvage personnel onboard the "DE DA" to assist her in connecting up and three members of the salvage team were sent to Vigo. The Salvage Master planned to connect the "DE DA" to the casualty's stern to replace the smaller "ALONSO DE CHAVES". The Salvage Master and the remainder of the salvage team departed for the heliport for transfer onto the "RIA DE VIGO" from where the Salvage Master planned to co-ordinate the salvage operation.
13.30	The helicopter was on location and it was noted that an oil spill surrounded the casualty. It was clear that the condition of the vessel had deteriorated further and most of the main deck in the region of No. 3 Starboard had completely gone. The derrick mast was leaning over and was close to collapse. However, the weather conditions had eased. The casualty was being towed astern by the "ALONSO DE CHAVES" on a course of approximately 230° (T) at a speed of around 2 knots. The "RIA DE VIGO" was still connected up forward with the "SERTOSA TRIENTA Y DOS" standing by.
13.45	The Salvage Master and the remainder of his salvage team were winched onboard the "RIA DE VIGO". The Salvage Master contacted the Master of the "ALONSO DE CHAVES" and confirmed that the intention was to continue to tow the casualty in a Southerly direction. The ETA of the "DE DA" was now given as the early hours of 18th November.
Mon. 18th November 2002	
08.00	The tug "DE DA" was on location and confirmed that it was ready to connect up to the casualty. The weather conditions had eased to wind force 3-4 and a swell of 4-5 metres. By towing the casualty astern the damaged starboard side was partly shielded from the swell and weather. The intention was to replace the tug "ALONSO DE CHAVES" with the "DE DA" which was much larger and more powerful with a bollard pull of 185 tonnes.
10.15	The messenger line was passed over from the "DE DA" to the

	"ALONSO DE CHAVES".
10.35	The "DE DA" was successfully connected up to the casualty and started towing with 800 metres of tow wire.
10.40	The Master of the "RIA DE VIGO" advised the Salvage Master that his owners had received a request from the Spanish authorities for the "RIA DE VIGO" to leave the site and return to her charter commitments for the Spanish Government. The Salvage Master advised the Master of the "RIA DE VIGO" that their departure could not be permitted as "RIA DE VIGO" was needed to accommodate the Salvage Master and salvage team and to act as a utility vessel.
11.07	The "SERTOSA TRIENTA Y DOS" had run out of drinking water and was released by the Salvage Master. She departed the scene immediately.
11.20	The "RIA DE VIGO" received permission form the Spanish authorities to remain on site and assist with the casualty as required by SMIT.
11.40	With the tow making good progress the Salvage Master decided to disconnect the "RIA DE VIGO" and to put the salvage team back onboard the casualty to make her as safe as possible. The zodiac from the Spanish warship "BALEARES" was used to transfer five members of the salvage team back onboard the "PRESTIGE", with the Salvage Master remaining on the "RIA DE VIGO". The second salvage team of three personnel from the "DE DA" were transferred to the casualty via the tug "CHARUCA SILVEIRA".
12.30	All eight members of the salvage team were safely onboard the casualty. The salvage team shut down the generators to prevent the risk of damaged live power cables potentially igniting cargo. The ship's seawater inlet valves were closed and the engine room bilges were pumped clean. The air start system was made ready and all the batteries were disconnected. The turning gear was disengaged and the propeller was locked and the shaft was stopped from turning. Prior to their final departure from the casualty the salvage team rigged a new emergency towing arrangement on the casualty's bow in case there was a need to reconnect the "RIA DE VIGO". The ship was made as safe as possible prior to final abandonment.
12.50	The "RIA DE VIGO" started shortening up prior to disconnecting from the casualty.
14.30	The Smit Salvage team were advised by the Spanish Navy that further zodiac operations were not possible. Therefore a helicopter

	was required in order to transfer the salvage team from the casualty.
14.50	The salvage team completed rigging the emergency towing arrangement on the casualty's bow. Personnel from the Spanish coastguard boarded the casualty via helicopter in order to collect documents and take samples from the cargo. At the same time part of the Smit salvage team were lifted off.
16.50	The balance of the salvage team were transferred onto the "DE DA" which was towing the casualty astern on a steady course of 230° (T) at a speed of about 2-3 knots. The Salvage Master made an inspection on the starboard side of the casualty from the tug "RIA DE VIGO". He concluded that there was no real change in the casualty's condition at this time.
23.45	The Salvage Master was advised by the Master of the "RIA DE VIGO" that he had received orders from a nearby Portuguese warship that the convoy should alter course to 270°(T) to avoid entering Portuguese waters. The alteration of course did not increase the rolling of the casualty but was taking her straight into open seas.
Tues. 19th November 2002	
08.00	The Salvage Master was on the bridge of the "RIA DE VIGO" reviewing the situation at first light. Moments later the casualty started to break up. The tug "DE DA" was ordered to stop towing and the towing connection was cut.
11.25	Both the forward and the aft parts of the casualty were vertical and located in a position 42° 12.6' North, 12° 03.9' West.
16.15	The forward part of the casualty sank in position 42°10.8' North, 012°03.6' West. The stern section sank at the same location a short time later. As soon as this happened the demobilisation of the salvage team commenced. SMIT were advised that the Spanish authorities were taking charge of marking of the wreck and the anticipated oil pollution clean up operation.
Weds. 20th November 2002	
09.00	"RIA DE VIGO" alongside at Mauros for disembarkation of Salvage Master and salvage team.

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Appendix J

SALVAGE

FAX

SMIT Salvage B.V.
Zalmstraat 1
3016 DS Rotterdam
P.O. Box 1042
3000 BA Rotterdam
The Netherlands

Phone: +31 10 4549911
Fax: +31 10 4149184
E-mail: salvage@smit.com
www.smit.com

Company: The Director General of Marine Mercante
To :
C.c.:
Fax nr.: 0034 – 981 121 641 (fax no: Ceferino Nogueira
From: Geert Koffeman
Subject: "Prestige"
otal pages: 1 (Incl. this one)

DEL.GOBIERNO GALICIA/DEL.GOBIERNO GALI
REGISTRO/REXISTRO DE ENTRADA
121520000005928
15/11/2002 12:11:52
CEFERINO NOGUEIRA

Ref.: *"Prestige"* 5 October 2002

Dear Sirs,

As you are aware, we are rendering services to the "Prestige" her bunkers, stores cargo and freight in conjunction with the Spanish company Tecnosub under the terms of a Lloyds Standard Form of Salvage Agreement, 2000 Edition.

At the moment the situation is under control with the vessel being under tow of the tugs [complete as necessary] and we have a salvage crew of 10 men on board. The convoy is currently about 60 miles off the coast of Spain.

The vessel has some structural damage to her shell plating in way of number three ballast tank on the starboard side. What needs to be done is to bring the casualty into sheltered waters where a ship to ship transfer can be effected under controlled conditions.

We would request, therefore, that you give consideration to allocation us a port of refuge, or safe area to where we can bring the "Prestige" and deal with her problems in safety. We fully appreciate that your safety inspectors will want to visit the casualty to satisfy themselves that it is safe to bring her into sheltered Spanish territorial waters and we will, of course, assist in any way we can to have those inspectors visit the casualty.

We look forward to hearing from you as a matter of urgency.

Your sincerely,
SMIT Salvage Rotterdam

Geert Koffeman
Commercial Director

APPENDIX K

Weather Analysis Report

Norman Lynagh Weather Consultancy
18 Kings Road
Chalfont St. Giles
Buckinghamshire, HP8 4HS
England
tel: +44 (0) 1494 870220
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NORMAN LYNAGH
Weather Consultancy

"Prestige" – Sinking offshore NW Spain

Analysis of Weather Conditions

Report No: 0047-F2/03/NL

Prepared for

The Bahamas Maritime Authority

Job No: 4/0243

Date: 20th May 2003

File: c:\nlwc\Project Folders\4-0243\0047-F2.doc

CONTENTS

1. INTRODUCTION

1.1 The Author

1.1.1 I am a Chartered Meteorologist, accredited by the Royal Meteorological Society. I am a Member of The Academy of Experts, a Diplomate of the American Board of Forensic Examiners and a Member of the Royal Institute of Navigation.

1.1.2 I have worked in meteorology continuously since 1961 and since 1985 I have regularly been applying my accumulated experience to the field of Forensic Meteorology.

1.2 Definitions

1.2.1 The following are the definitions of various terms used in the report:

Wind speed:	Unless explicitly stated otherwise, all wind speeds are mean wind speeds.
Significant Height:	The average height of the highest one-third of the waves present.
Wind Wave Height:	The significant height of the waves generated by the local wind.
Sea:	Synonymous with Wind Wave Height.
Swell Height:	The significant height of the primary swell.

1.3 Summary of the Incident

1.3.1 On 13th Nov 2002, while making course southwards off NW Spain, the *"Prestige"* sustained hull damage in heavy weather. Over the following 6 days, with tug assistance, she remained at sea off NW Spain. On 19th Nov 2002 she sank in position 42.2°N 12.1°W

1.4 Summary of My Conclusions

1.4.1 Overall conditions at the time of the initial damage on 13th Nov 2002 were not exceptional for the waters off NW Spain in winter. The total significant wave height reached around 6 metres.

1.4.2 It is possible that the *"Prestige"* encountered an isolated wave in excess of 10 metres from trough-to-crest with a very steep face and a high toppling crest.

1.4.3 After the initial damage, but before the *"Prestige"* sank on 19th Nov 2002, the vessel experienced another spell of relatively heavy weather on 16th Nov. In this spell the total significant wave height approached 7 metres.

1.4.4 From 14th to 19th Nov 2002 the conditions in Ria de Vigo were mostly relatively benign. The exception was 16th Nov when there were NW winds of 20-25 knots with gusts over 30 knots.

2. STATEMENT OF INSTRUCTIONS

2.1 I am instructed by The Bahamas Maritime Authority to provide a detailed analysis of the weather encountered by the *"Prestige"* from 12th Nov 2002 until she sank on 19th Nov 2002.

3. DOCUMENTS EXAMINED AND DATA USED

3.1 Documents Examined

3.1.1 Copies of the following documents were provided by The Bahamas Maritime Authority:

a) Bridge Log Book of the *"Prestige"* for the period 5th-13th Nov 2002.

b) A list of hourly positions extracted from the GPS Log of the *"Prestige"* for the period 5th Nov 2002 to 1500 on 13th Nov 2002.

c) A map showing the track of the *"Prestige"* from 1515 on 13th Nov 2002 until she sank at 1145 on 19th Nov 2002.

d) Report titled "Rapport de Situation Meteorologique *"Prestige"*", prepared by Meteo France, dated 18th March 2003.

e) Report titled "Wind and Wave Charts + Issued Forecasts" prepared by the U.K. Met Office, reference M/BGM/16/5/92, dated 21st November 2002.

3.2 Meteorological Data

3.2.1 From meteorological archives I have made use of the following:

a) 6-hourly broadscale synoptic weather charts issued by the U.K. Met Office, covering the NE Atlantic Ocean, Europe and the Mediterranean Sea.

b) 12-hourly broadscale synoptic weather charts issued by the National Center for Environmental Prediction at the U.S. National Weather Service, covering the North Atlantic Ocean, NW Africa, Europe and the Mediterranean Sea.

c) 12-hourly broadscale analysis charts of total significant wave height issued by the UK Met Office, covering the NE Atlantic Ocean.

d) 12-hourly analysis fields from the U.S. Navy NOGAPS atmospheric and wave numerical models.

e) 6-hourly synoptic weather observations from land stations and ships in the area 41°-45°N, 7°-15°W.

f) Half-hourly weather observations made at Vigo Airport, Spain.

3.2.2 Using the above material, I prepared detailed weather and seastate charts at 6-hourly intervals for the area 41°-45°N, 8°-15°W. From these charts I carried out a detailed analysis of the conditions experienced by the *"Prestige"*.

4. DAY-BY-DAY WEATHER ANALYSIS

4.1 In this section I give my opinion of the conditions that actually occurred during each of the days examined. The opinion is a best-estimate based on careful consideration of all the data used.

4.2 **Tuesday 12th November 2002**

4.2.1 A very large, deep low pressure system was centred to the west of Scotland throughout the day. It began the day with a central pressure of around 965 mb and very slowly filled to about 970 mb by the end of the day. On its southern flank the circulation of the low extended to the Azores and southern Portugal. Minor fronts and troughs were moving eastwards through the Bay of Biscay and the waters between Spain/Portugal and the Azores. During the evening a new low developed north of the Azores and began to deepen significantly as it moved rather quickly eastwards. By midnight it had deepened to around 995 mb, centred near 43°N 20°W.

4.2.2 The *"Prestige"* was making passage across the Bay of Biscay. She encountered persistent SW winds mostly between 25 knots and 30 knots although there was probably a temporary lull to 20-25 knots for a few hours in the middle of the day. There were persistent head seas with a significant height around 2.5 metres or slightly below for much of the day. During the evening the seas probably increased somewhat. There was a persistent swell from WNW throughout the day. This had a significant height of around 4.5 metres or slightly below with a period of 11-12 seconds. The significant height of the total sea state was around 5 metres throughout the day, probably a little below 5 metres to begin with and a little above later in the day.

4.2.3 The following are my best-estimates of spot values of conditions experienced by the *"Prestige"* at 3-hourly intervals:

Time (local)	Wind	Sea	Swell	Total Significant Wave Height
0100	SW 27 kn	2.3 m	WNW 4.2 m 11 sec	4.8 m
0400	SW 27 kn	2.4 m	WNW 4.2 m 11 sec	4.8 m
0700	SW 28 kn	2.5 m	WNW 4.3 m 12 sec	5.0 m
1000	SW 22 kn	2.4 m	WNW 4.5 m 12 sec	5.1 m
1300	SW 20 kn	2.2 m	WNW 4.5 m 12 sec	5.0 m
1600	SW 25 kn	2.3 m	WNW 4.4 m 12 sec	5.0 m
1900	SW 29 kn	2.7 m	WNW 4.3 m 12 sec	5.2 m
2200	SW 28 kn	3.0 m	WNW 4.3 m 12 sec	5.2 m

Table 4.1 - Weather Conditions Experienced by the *"Prestige"* on 12th Nov 2002

4.3 Wednesday 13th November 2002

4.3.1 The low that developed north of the Azores during the evening of the 12th turned NE and deepened, rapidly becoming the dominating feature of the weather in the area. By 1300 LT it appears to have become complex, with two centres of about 978 mb. One centre was located near 44.3°N 9.7°W while the other was near 43.3°N 10.2°W, about 20 miles NW of the position of the *"Prestige"* at that time. During the afternoon the low continued to move quickly NE and deepened further to be 970 mb centred near Brest by 1900 LT and 967 mb over SW England by midnight.

4.3.2 During the morning conditions experienced by the *"Prestige"* gradually deteriorated. The wind was SSW and strengthened to Force 8 (gale force) by late morning. The sea increased to near 4 metres by midday, while a NW swell persisted at about 4 metres. The total significant wave height increased to between 5½ and 6 metres by midday.

4.3.3 In the early afternoon, probably between 1400 and 1500 LT, the wind at the *"Prestige"* veered WNW and strengthened to Force 9 (severe gale force). This change was probably very sudden. This severe WNW gale persisted until around 1600 LT, possibly with a brief strengthening to Force 10. Gusts probably exceeded 60 knots for a short time. After 1600 the wind dropped quickly and was down to around 25 knots by 1900 LT. The sea decreased to around 2.5 metres by evening but the NW swell persisted at around 4 metres. The total significant wave height probably peaked at around 6 metres in the early afternoon then decreased to less than 5 metres by evening.

4.3.4 The following are my best-estimates of spot values of conditions experienced by the *"Prestige"* at 3-hourly intervals:

Time (local)	Wind	Sea	Swell	Total Significant Wave Height
0100	SW 25 kn	3.2 m	WNW 4.3 m 12 sec	5.4 m
0400	SSW 25 kn	3.0 m	NW 4.2 m 12 sec	5.2 m
0700	SSW 26 kn	2.6 m	NW 4.2 m 12 sec	4.9 m
1000	SSW 40 kn	3.5 m	NW 4.1 m 12 sec	5.4 m
1300	SW 35 kn	3.8 m	NW 4.0 m 12 sec	5.7 m
1600	WNW 45 kn	4.2 m	NW 3.9 m 12 sec	5.7 m
1900	NW 25 kn	2.5 m	NW 3.7 m 12 sec	4.7 m
2200	W 25 kn	2.5 m	NW 3.8 m 12 sec	4.5 m

Table 4.2 - Weather Conditions Experienced by the *"Prestige"* on 13th Nov 2002

4.3.5 A more detailed discussion of the weather conditions at the time of the initial damage to the *"Prestige"* is given in Section 5 of this report.

4.4 Thursday 14th November 2002

4.4.1 A complex low pressure centre lay over the SW of the British Isles throughout the day. The circulation of this low was very extensive, covering much of the NE Atlantic Ocean, Europe and the western Mediterranean. As the low gradually filled the winds over the Bay of Biscay and the waters off NW Spain gradually decreased.

4.4.2 The *"Prestige"* came close to the coast between Cabo Finisterre and Cabo Toriñana during the morning then moved further offshore towards the NNW later in the day. To begin with she had WSW winds of a little over 20 knots. The wind gradually dropped to around 10 knots by midday and persisted at that strength through the afternoon. It then strengthened a little during the evening to around 15 knots by midnight. The sea at the vessel decreased to 1 metre or less by midday and persisted at that level through the afternoon. In the evening it increased to around 1.5 metres. There was a persistent WNW swell throughout the day with a period of 11-12 seconds. Through the morning and into the early afternoon it was a little over 4 metres. Later in the afternoon it decreased to between 3½ and 4 metres. The total significant wave height was between 4 metres and 5 metres throughout.

4.4.3 Winds reported from Vigo Airport are in the following table. They are given in the form ddd/ff, where ddd is the direction, in degrees, from which the wind is blowing and ff is the mean wind speed in knots. Any observations missing are left blank in the table.

Time (local)	Wind	Time (local)	Wind	Time (local)	Wind	Time (local)	Wind
0000	170/04	0600	190/08	1200	210/06	1800	180/02
0030	210/05	0630	190/09	1230		1830	180/06
0100	210/06	0700	190/09	1300	180/03	1900	180/04
0130	210/06	0730		1330		1930	180/10
0200	210/05	0800		1400	190/08	2000	180/06
0230	210/05	0830	170/07	1430	190/06	2030	190/06
0300	210/06	0900	170/06	1500	180/09	2100	190/06
0330	200/08	0930		1530	190/06	2130	190/08
0400	190/08	1000	180/05	1600		2200	210/05
0430		1030	180/06	1630	190/08	2230	240/05
0500		1100	180/05	1700	180/07	2300	230/04
0530	190/08	1130	180/04	1730	180/05	2330	190/03

Table 4.3 - Winds Measured at Vigo Airport on 14th Nov 2002

4.4.4 Winds in Ria de Vigo would have dropped below 10 knots by mid-morning and would have remained at that level for the remainder of the day. The primary swell was from the WNW. The ria is fairly well sheltered from this direction so only a small amount of swell energy would have penetrated into it. It is therefore likely that conditions in Ria de Vigo became benign by the middle of the day.

4.5 Friday 15th November 2002

4.5.1 A low pressure centre drifted SE from the SW of the British Isles into the Bay of Biscay. Although the centre was filling slowly relatively strong NW winds persisted on its western flank. These winds gradually encroached into the waters off NW Spain.

4.5.2 At the *"Prestige"* the day began with W'ly winds of around 17 knots. These conditions persisted until around the middle of the day. The wind then veered to NW and slowly strengthened. By 1800 LT it was about 22 knots and by midnight it had reached around 24 knots. The sea gradually increased from around 1.5 metres to around 3 metres. The swell was persistent from WNW-NW with a period of around 11 seconds. The significant height was a little below 4 metres for much of the day, increasing to a little over 4 metres in the evening. The total significant wave height started the day at around 4 metres and gradually increased to around 5 metres.

4.5.3 Winds reported from Vigo Airport are in the following table. They are given in the form ddd/ff, where ddd is the direction, in degrees, from which the wind is blowing and ff is the mean wind speed in knots. Any observations missing are left blank in the table.

Time (local)	Wind	Time (local)	Wind	Time (local)	Wind	Time (local)	Wind
0000	190/06	0600	190/06	1200	180/04	1800	180/08
0030	190/06	0630	170/06	1230	180/06	1830	180/07
0100	180/06	0700	180/06	1300	180/06	1900	180/07
0130	180/05	0730	180/06	1330	190/05	1930	180/07
0200	190/04	0800	180/05	1400	180/05	2000	180/05
0230	180/06	0830	160/06	1430	180/04	2030	180/06
0300	190/05	0900	130/02	1500	180/06	2100	190/05
0330		0930	180/04	1530	180/05	2130	180/05
0400	180/06	1000	180/02	1600	180/06	2200	200/05
0430		1030	180/05	1630	180/06	2230	190/04
0500		1100	190/07	1700	180/07	2300	Var/03
0530		1130	190/07	1730	180/07	2330	Var/03

Table 4.4 - Winds Measured at Vigo Airport on 15th Nov 2002

4.5.4 In Ria de Vigo winds were W-SW 10-15 knots for much of the day. This would probably have produced a slight chop of less than half a metre. With the main swell persisting from WNW-NW only a very small amount of swell energy would have penetrated into the ria.

4.6 Saturday 16th November 2002

4.6.1 The low pressure centre in the Bay of Biscay gradually filled during the day but the area of strong NW winds associated with it off NW Spain persisted for much of the day. In the evening a weakening ridge of high pressure moved in from the west, ahead of a set of fronts associated with a deep low pressure centre located just east of the southern tip of Greenland.

4.6.2 At the *"Prestige"* the wind veered to NNW and strengthened to 30-35 knots before dawn. This wind then persisted throughout the daylight hours and into the early evening. It then decreased to 20-25 knots by midnight. The sea was 4-5 metres for much of the day, decreasing during the evening to be around 3 metres by midnight. The primary swell was from the NW at first but during the morning it became NNW. The period was 11-12 seconds at first, shortening a little to 10-11 seconds later. The height was 4-5 metres throughout. The total significant wave height was around 5 metres at first. It increased to 6-7 metres before dawn and persisted at that level until early evening. It then decreased to around 5 metres by midnight.

4.6.3 Winds reported from Vigo Airport are in the following table. They are given in the form ddd/ff, where ddd is the direction, in degrees, from which the wind is blowing and ff is the mean wind speed in knots. Any observations missing are left blank in the table.

Time (local)	Wind	Time (local)	Wind	Time (local)	Wind	Time (local)	Wind
0000	Var/02	0600	310/04	1200	300/03	1800	320/10
0030	Var/03	0630	310/07	1230	320/06	1830	320/08
0100	210/04	0700	320/07	1300	300/10	1900	320/09
0130	Var/03	0730	310/07	1330	310/10	1930	330/05
0200	200/04	0800	330/08	1400	320/06	2000	320/04
0230		0830	330/08	1430	320/06	2030	320/04
0300	Var/03	0900	340/06	1500	320/06	2100	320/06
0330	Var/03	0930	340/05	1530	330/16	2130	320/05
0400	300/04	1000	Var/02	1600	320/06	2200	290/06
0430	310/04	1030	230/05	1630	310/09	2230	300/06
0500	300/05	1100	340/05	1700	320/10	2300	320/06
0530	Var/03	1130	340/04	1730	320/11	2330	300/10

Table 4.5 - Winds Measured at Vigo Airport on 16th Nov 2002

4.6.4 A gust of 30 knots was reported at Vigo Airport at 1430 and another of 27 knots at 1730.

4.6.5 In Ria de Vigo the wind probably became NW'ly in the early hours and increased to 20-25 knots by dawn. This NW wind of 20-25 knots persisted throughout the daylight hours and into the early evening with gusts over 30 knots. During the evening the wind veered to NNW and decreased below 20 knots. The wind would have produced a short chop of up to half a metre in the ria. With the swell turning more to the NNW there would have been very little swell energy penetrating into the ria, even though the swell height had increased offshore.

4.7 Sunday 17th November 2002

4.7.1 A very weak ridge of high pressure moved east across the Bay of Biscay and Spain/Portugal. A weak set of fronts moved east from the Atlantic to lie N-S along 10°W by midnight. The fronts were associated with a very deep low centre slow-moving to the east of the southern tip of Greenland.

4.7.2 At the *"Prestige"* the wind started off NNW at about 20 knots. It soon decreased and backed and by dawn it was W'ly around 12 knots. In the afternoon it backed to WSW and strengthened to 20-25 knots ahead of the fronts. Once the fronts passed through in the early evening the wind veered to WNW and decreased to 10-12 knots. The sea quickly decreased to less than 1 metre during the early hours and remained at that level till after midday. It then increased to over 2 metres as the wind strengthened then decreased during the evening to around 1 metre by midnight. The swell began as NNW 4-4½ metres with a period of 10-11 sec. Through the day it gradually decreased and shortened to become NW 2 metres with a period of 8 seconds by evening. The total significant wave height gradually decreased from 5 metres in the early morning to less than 3 metres by evening.

4.7.3 Winds reported from Vigo Airport are in the following table. They are given in the form ddd/ff, where ddd is the direction, in degrees, from which the wind is blowing and ff is the mean wind speed in knots. Any observations missing are left blank in the table.

Time (local)	Wind	Time (local)	Wind	Time (local)	Wind	Time (local)	Wind
0000	010/04	0600		1200	Var/03	1800	270/06
0030	350/04	0630	320/04	1230	Var/03	1830	280/06
0100	020/03	0700	Calm	1300	270/05	1900	280/05
0130	350/08	0730	Calm	1330	270/05	1930	280/05
0200		0800	Calm	1400	280/05	2000	180/05
0230		0830	Calm	1430	270/06	2030	190/04
0300		0900	Var/03	1500	280/08	2100	Var/03
0330	020/03	0930	Calm	1530	280/07	2130	190/07
0400	320/06	1000	Var/03	1600	290/08	2200	200/04
0430	320/10	1030	Var/03	1630	280/06	2230	190/05
0500	350/08	1100	Calm	1700	280/07	2300	200/04
0530	320/06	1130	Var/03	1730	280/05	2330	200/05

Table 4.6 - Winds Measured at Vigo Airport on 17th Nov 2002

4.7.4 In Ria de Vigo the wind was NNW throughout the morning. It started off around 15 knots but quickly dropped below 10 knots. During the afternoon it backed to SW and increased to around 15 knots by evening. During the morning there was little or no sea in the ria but during the afternoon and evening, with the wind blowing from SW, seas up to around 1 metre may have penetrated into the ria. There would have been little or no penetration of swell energy.

4.8 Monday 18th November 2002

4.8.1 A very weak front moved east across the Bay of Biscay and Spain/Portugal. Another, somewhat stronger front moving east from the Atlantic reached around 12°W by midnight. Both of these fronts were associated with a slow-moving filling low centred near the southern tip of Greenland.

4.8.2 At the *"Prestige"* winds were W-SW throughout the day. They were 10-15 knots for much of the time but strengthened in the evening to around 20 knots by midnight. The sea was around 1 metre for much of the day, increasing to 2 metres by midnight. The swell was around 2 metres throughout the day. Initially it was from NW with a period of about 8 seconds. This was gradually replaced by a W-WNW swell with a period of around 11 seconds. The total significant wave height was mostly between 2 and 3 metres.

4.8.3 Winds reported from Vigo Airport are in the following table. They are given in the form ddd/ff, where ddd is the direction, in degrees, from which the wind is blowing and ff is the mean wind speed in knots. Any observations missing are left blank in the table.

Time (local)	Wind	Time (local)	Wind	Time (local)	Wind	Time (local)	Wind
0000	190/05	0600	180/04	1200	180/07	1800	190/05
0030	200/07	0630	180/07	1230	180/06	1830	180/04
0100	210/06	0700	180/06	1300	190/08	1900	180/05
0130	190/06	0730	180/08	1330	180/06	1930	180/07
0200	200/05	0800	180/07	1400	200/07	2000	180/07
0230	180/06	0830	180/06	1430	210/06	2030	180/08
0300	170/07	0900	180/06	1500	240/04	2100	180/08
0330	200/06	0930	190/07	1530	190/05	2130	180/05
0400	170/07	1000	180/05	1600	180/05	2200	180/04
0430	170/07	1030	180/05	1630	180/04	2230	200/10
0500	170/07	1100	180/05	1700	190/06	2300	200/12
0530	170/07	1130	180/05	1730	180/05	2330	220/08

Table 4.7 - Winds Measured at Vigo Airport on 18th Nov 2002

4.8.4 Winds at Ria de Vigo were SW'ly for much of the day. During the morning they were typically around 10 knots but in the afternoon they strengthened to 15-20 knots. Seas of about 1 metre probably penetrated into the ria during the afternoon and evening. Some long-period swell energy may also have penetrated as the swell direction became W-WNW.

4.9 Tuesday 19th November 2002

4.9.1 Relatively weak fronts moved east across the Bay of Biscay and Spain/Portugal during the day. A weak ridge of high pressure followed the fronts from the Atlantic Ocean.

4.9.2 In the very early hours the wind at the *"Prestige"* veered to NW and strengthened to 25-28 knots. It remained at this strength only for a short time. By dawn it had decreased to around 20 knots, still from the NW. During the daylight hours it was WNW 20-25 knots up to the time the *"Prestige"* sank. The sea was 2-3 metres throughout, up to the time of the sinking. The swell was WNW with a period of 10-11 seconds. The swell height started off at around 2 metres and gradually increased to around 3 metres by the time of the sinking. The total significant wave height gradually increased to be near 4 metres by the time of the sinking.

4.9.3 Winds reported from Vigo Airport are in the following table. They are given in the form ddd/ff, where ddd is the direction, in degrees, from which the wind is blowing and ff is the mean wind speed in knots. Any observations missing are left blank in the table.

Time (local)	Wind	Time (local)	Wind	Time (local)	Wind	Time (local)	Wind
0000	220/06	0600	260/04	1200	080/01	1800	210/03
0030	210/06	0630	230/02	1230	230/01	1830	230/02
0100	230/07	0700	Var/02	1300	100/02	1900	Var/01
0130	210/07	0730	180/04	1330	150/01	1930	210/03
0200	200/06	0800	200/06	1400	Var/02	2000	230/04
0230	190/07	0830	340/10	1430	150/03	2030	Var/03
0300		0900	360/05	1500	150/04	2100	Var/03
0330	180/05	0930	010/05	1530	Var/02	2130	270/05
0400	180/06	1000	010/03	1600	270/03	2200	060/05
0430	190/07	1030	Var/01	1630	250/02	2230	040/02
0500	180/06	1100	330/02	1700	Calm	2300	040/02
0530	180/05	1130	090/02	1730	Calm	2330	220/06

Table 4.8 - Winds Measured at Vigo Airport on 19th Nov 2002

4.9.4 To begin with winds in Ria de Vigo were light but by the middle of the day they had become NW 15-20 knots. The strengthening NW winds would have produced a slight chop of less than half a metre. Some low swell energy may have penetrated into the ria.

5. WEATHER AT TIME OF INITIAL DAMAGE

5.1 The *"Prestige"* sustained the first damage in the early afternoon of 13th November 2002. This was at a time when the weather situation was very complex, with a low pressure centre passing close north of the location of the *"Prestige"*.

5.2 Ahead of the low pressure centre, the *"Prestige"* had experienced strengthening SSW winds during the morning. The wind reached gale force before midday. As the low centre came close to the *"Prestige"*, just after midday, the wind may have decreased a little for a very short time before suddenly becoming WNW Force 9. The onset of the Force 9 WNW wind probably occurred sometime between 1400 and 1500 LT. This is around the time that the initial damage was sustained.

5.3 Around the time of the initial damage the seastate would have been very confused. There was a long-period swell from the NW with a significant height of around 4 metres. There was a short-period sea from WNW being generated by the newly-arrived Force 9 WNW wind. There were short-period waves from the SSW left over from the SSW gale that had just moved out of the area. In such a scenario the overall seastate takes on a very chaotic appearance, often with high wave crests toppling in unexpected directions. My best-estimate is that the significant height of the total sea state at the time was around 6 metres. This implies that the *"Prestige"* may well have encountered occasional individual waves of 10-11 metres. It is possible that there were isolated individual waves a metre or two higher than this. It is therefore perfectly possible that the toppling crest of a very steep-faced wave could have hit the *"Prestige"*, with a trough-to-crest height exceeding 10 metres. This crest could have come from any direction within the sector from SSW to NW but most likely from between W and NW.

6. CONCLUSIONS

6.1 Between 12th and 16th Nov 2002 the total significant wave height experienced by the *"Prestige"* was constantly 4 metres or more. There were two peaks of relatively severe conditions. The first was in the early afternoon of 13th Nov when the total significant wave height reached around 6 metres. The second was during 16th Nov when the total significant wave height approached 7 metres. These conditions were not exceptional for the waters off NW Spain in the winter months and can be expected to occur more than once in an average year.

6.2 The total significant wave height at the *"Prestige"* decreased to less than 3 metres during 17th Nov and remained at that level until early on the 19th. It then began to increase again and by the time the vessel sank the total significant wave height was approaching 4 metres.

6.3 Although the overall conditions at the time of the initial damage on 13th Nov 2002 were not exceptional the situation was such that isolated steep, high toppling wave crests may have occurred, associated with individual waves exceeding 10 metres from trough to crest. It is possible that the *"Prestige"* was struck by such a crest.

6.4 From 14th to 19th Nov 2002 the weather conditions in Ria de Vigo were mostly benign. The exception was 16th Nov, when NW winds of 20-25 knots prevailed, with gusts exceeding 30 knots.

This report is intended for the sole use of the party or parties to whom it is addressed and no liability of any nature whatsoever shall be assumed to any other party in respect of its contents.

NORMAN LYNAGH WEATHER CONSULTANCY

Signed: _____

Mr. N. Lynagh, CMet, MAE, DABFE, MRIN

Date: 20th May 2003

APPENDIX L

Spanish Court Documents

- 'Denuncia' of Harbour Master of La Coruna – 14 November 2002
- English Translation of 'Denuncia' of Harbour Master of La Coruna – 14 November 2002
- Court Order 16 November 2002
- English Translation of Court Order 16 November 2002
- Appearance of Cipriano Castreje Martinez in Court 16 November 2002
- English Translation of Appearance of Cipriano Castreje Martinez in Court 16 November 2002
- Court Order 17 November 2002
- English Translation of Court Order 17 November 2002

A LA COMANDANCIA DE LA GUARDIA CIVIL

EL CAPITÁN MARÍTIMO DE LA CORUÑA, en el ejercicio de las funciones que le son propias, al amparo del artículo 125.1 de la Ley 27/1992, de Puertos del Estado y de la Marina Mercante, **EXPONE:**

Siendo aproximadamente las 16:00 horas del día 13 de noviembre de 2002, se tiene conocimiento por esta Capitanía Marítima de que el buque petrolero de bandera de Bahamas, denominado "PRESTIGE", (IMO- 7372141), con un arqueo bruto de 42.820 Toneladas se encuentra aproximadamente a 28 millas al oeste del cabo de Finisterre en grave peligro de hundimiento, con una tripulación de 27 personas y una carga de 77.000 toneladas de hidrocarburos "IFO 380", depositada en los tanques de la embarcación.

Puestos en funcionamiento los servicios de salvamento marítimo, un total de 24 tripulantes del buque fueron oportunamente evacuados, quedando en la nave tres de ellos, incluidos el capitán y el jefe de máquinas. Las condiciones meteorológicas del momento, con vientos de fuerza 8 y rachas de 9 y la grave escora de la nave, que osciló sobre los 20-25 grados a estribor, ponen en grave peligro la situación, toda vez que un posible hundimiento podría provocar que los tanques reventaran con el consiguiente derrame de hidrocarburos en la mar.

A la vista del mencionado peligro, los servicios de la Marina Mercante optan por mantener el buque lo más alejado posible de las costas gallegas, intentando realizar una maniobra de remolque mar adentro. Este intento se ve, sin embargo, enormemente dificultado por la actitud obstructiva del capitán del buque, que se niega a permitir a las autoridades españolas la adopción de las medidas necesarias para el salvamento y consiguiente protección del medio marino. Al menos durante tres horas, no se pudieron iniciar las labores señaladas, como consecuencia de la conducta del capitán del buque, quien desobedece todas las instrucciones y órdenes recibidas de la autoridad actuante.

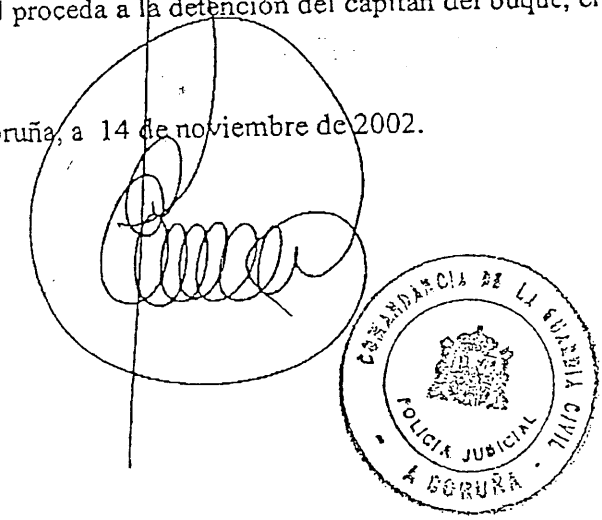
En definitiva, los hechos anteriormente descritos pudieran ser constitutivos de un delito de desobediencia a la autoridad previsto y penado en el artículo 556 del Código Penal español y de un delito contra los recursos naturales y el medio ambiente tipificado en el artículo 325 del mismo texto legal.

Con el fin de posibilitar la realización de las averiguaciones tendentes al esclarecimiento de los hechos, se interesa que se proceda a la detención preventiva del denunciado, para cuya debida identificación se deberán realizar cuantas diligencias sean precisas, de conformidad con lo establecido en el artículo 373 de la Ley de Enjuiciamiento Criminal.

Por todo ello,

SOLICITA que habiendo por recibido este escrito con su copia se sirva admitirlo y en su virtud tenga por formulada la denuncia de los hechos relatados, instruyendo las diligencias oportunas para la determinación de los hechos e identificación de las personas responsables, y con carácter provisional proceda a la detención del capitán del buque, en los términos señalados.

En La Coruña, a 14 de noviembre de 2002.



To the 'Comandancia de la Guardia Civil'[2]

The Harbour Master of A Coruña in all his official functions, under section 125-1 of the 'Ley 27/1992 de Puertos del Estado y de la Marina Mercante'[3], **explains**:

That approximately at 16:00 of 13 November 2002, this harbour mastership receives the news that the oil tanker with flag of The Bahamas called 'Prestige' (IMO[4]-7372141), with a gross tonnage of 42.820 tons is approximately 28 miles west from Finisterre cape in severe risk of sinkage, with a crew of 27 members and a load of 77.000 tons of cargo oil stored in the tanks of the vessel.

The Maritime Rescue Services evacuated 24 members of the crew, while three of them stayed in the vessel, including the master and the Chief Engineer Officer. The wheather, with a wind force of 8 and guts of 9 and the severe list of the vessel, between 20 and 25 degress starboard, make the situation very dangerous, provided that the tanks may explode if the vessel collapsed, spilling the cargo oil on the sea.

Seeing the above mentioned danger, the services of the Merchand Shipping decide to keep the vessel as far as possible from the Galician coasts, trying to tow the vessel into deep sea. Nevertheless, this intention is opposed by the disruptive attitude of the master of the vessel, who denies his permission to the Spanish authorities to adopt the necesary measures to salvage and consequently protect the marine environment. The mentioned measures could not be taken for at least three hours, as a consequence of the attitude of the master of the vessel, who did not obbey any of the orders of the authorities.

Finally, the previously described facts may constitute an offence disobbeyance under section 556[5] of the 'Codigo Penal'[6] and an offence against natural resources and the environment, under section 325 of the same legal text.

In order to make possible the inquiries necesary to set the facts, we apply for the preventive detention of the accused person, for whose identification all the necesary proceedings must be performed, under section 373 of the 'Ley de Enjuiciamiento Criminal'.

For which reasons,

We seek that having received this document and its copy, shall admit it denounce made, undertaking the pertinent proceedings to set the facts and to identify the persons responsible, and that as a preventive measure, shall detain the master of the vessel under the conditions mentioned.

In A Coruña, 14 November 2002.

(ilegible signature)

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[2] Local management department of the Guardia Civil
[3] State and Merchand Shipping Harbours Act 27/1992.
[4] Institute for Marker Ecologie
[5] ilegible in the original
[6] Spanish Criminal Code

JUZGADO DE INSTRUCCION Nº 4
A CORUÑA

C/MONFORTE S/N
Teléfono: xx, Fax: 981-185257
DILIGENCIAS PREVIAS PROC. ABREVIADO 2787 /2002 -L

Número de Identificación Único: 15030 2 0404723 /2002

A U T O

En A CORUÑA a dieciséis de Noviembre de dos mil dos .

HECHOS

UNICO.- Las presentes actuaciones se incoan en virtud de atestado de la GUARDIA CIVIL por un presunto delito de CONTRA LOS RECURSOS NATURALES Y EL MEDIO AMBIENTE, y también un posible delito de desobediencia a Autoridad Administrativa, en cuyos ilícitos aparece implicado MANGOURAS APOSTOLOS .

RAZONAMIENTOS JURIDICOS

UNICO.- Habida cuenta de la imposibilidad de la comunicación con el detenido y considerándose imprescindible la asistencia de un intérprete de su idioma para una mejor instrucción de la causa y aclaración de los hechos, existiendo indicios racionales de criminalidad en la conducta del detenido, por el momento. Procederá que el Juzgado haga uso del art. 492 y concordantes de la L.E.Cr. en consecuencia acordar la detención del ya detenido que no podrá sobrepasar las 72 horas, a los efectos de continuar con la diligencia de la declaración de dicho detenido prevista para mañana día 17 a las 12.00 horas. Diligencia procesal ineludible y que exige adoptar esta medida de detención sin que sea posible el sustituirla por otra menos gravosa.

Procederá que el detenido sea conducido por las mismas fuerzas del orden que lo trasladaron a este Juzgado, y al mismo lugar de procedencia, donde permanecerá hasta su traslado mañana a este Juzgado.

PARTE DISPOSITIVA

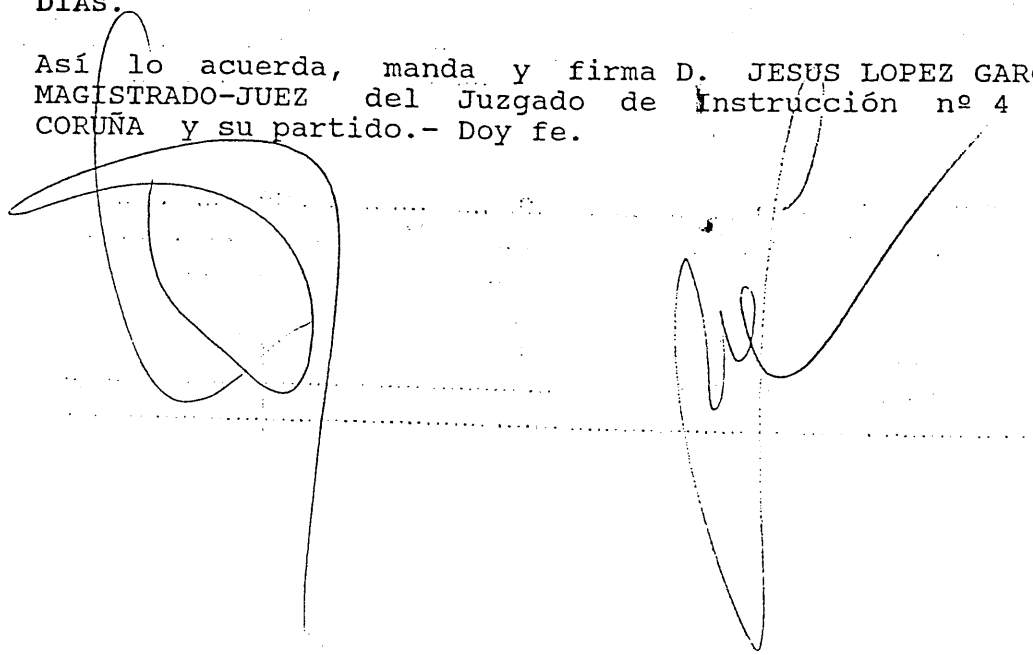
SE DECRETA LA DETENCIÓN DE MANGOURAS APOSTOLOS EN ESA CALIDAD DE DETENIDO en las dependencias de la Guardia Civil y a disposición de este Juzgado, donde deberá ser presentado el día de mañana 17 de noviembre a las 12.00 horas a fin de recibirle declaración.

Abrase pieza separada de situación personal y llévese

testimonio a los autos principales. Líbrese la orden correspondiente a la Guardia Civil para su traslado y custodia.

NOTIFIQUESE LA PRESENTE RESOLUCION AL MINISTERIO FISCAL Y AL DETENIDO haciéndoles saber que la misma no es firme y podrán interponer recurso de reforma en el plazo de **TRES DIAS.**

Así lo acuerda, manda y firma D. JESUS LOPEZ GARCIA , MAGISTRADO-JUEZ del Juzgado de Instrucción nº 4 de A CORUÑA y su partido.- Doy fe.



TRIAL COURT N° 4
A CORUÑA

C/ MONFORTE No N°
Telephone: xx Fax: 981-185257
PRIOR PROCEEDINGS ABBREVIATED PROCEEDINGS 2787 / 2002 – L

Unique Identification Number: 15030 2 0404723/2002

RULING

In A CORUÑA on the sixteenth of November two thousand and two.

FACTS

SINGLE: The present actions are brought as a result of a certificate from the GUARDIA CIVIL for an alleged crime AGAINST NATURAL RESOURCES AND THE ENVIRONMENT, and also a possible crime of disobedience of the Administrative Authority, in whose unlawful acts MANGOURAS APOSTOLOS appears to be implicated.

LEGAL GROUNDS

SINGLE: Taking into account the impossibility of communicating with the detained person and considering the attendance of an interpreter in his language to be essential for a better trial of the case and clarification of the facts, reasonable indications existing of criminality in the conduct of the detained person, for the moment, it is appropriate for the Court to make use of art. 492 and concordant of the Law of Criminal Proceedings and as a result to order the detention of the detained person which cannot exceed 72 hours, for the purposes of continuing with the procedure of the declaration by the said detained person scheduled for tomorrow morning, 17th, at 12:00 hours. This is an unavoidable procedural procedure which requires the adoption of this detention measure which it is not possible to substitute for another less offensive procedure.

The detained person will be taken by the same forces of law who brought him to this Court to the place from which he came where he will remain until his transfer tomorrow to this Court.

PROVISIONS

THE DETENTION IS ORDERED OF MANGOURAS APOSTOLOS IN THE CAPACITY OF DETAINEE in the premises of the Guardia Civil and at the disposal of this Court, where he must be presented tomorrow, 17 November at 12:00 hours in order to receive his statement.

Let a separate file be opened on his personal situation and let testimony of this be brought to the main files. Let the corresponding order be given to the Guardia Civil for his transfer and custody.

LET THE PRESENT RESOLUTION BE NOTIFIED TO THE ATTORNEY GENERAL'S OFFICE AND TO THE DETAINEE informing them that it is not firm and they may lodge an appeal within a period of THREE DAYS.

Thus agrees, orders and signs MR JESUS LOPEZ GARCIA, MAGISTRATE-JUDGE of Trial Court N° 4 in A CORUÑA and district. I bear witness.

R. General 959 Prenas 897
16-11-2002

XULGADO DE PRIMEIRA INSTANCIA E
INSTRUCCION NUM.DOUS
CORCUBION (A CORUÑA)
Tfno.981.74.54.74

COMPARECENCIA DE CIPRIANO CASTREJE MARTINEZ

En Corcubión a dieciseis de Noviembre de dos mil dos. Ante el Sr. Juez y de mi Secretario comparece el arriba indicado, mayor de edad. casado, vecino de Finisterres, con D.N.I. 76341357-X, quien debidamente juramentado manifiesta:

Que formula denuncia contra el Capitan, Primer Oficial, Jefe de maquinas del petrolero PRESTIGE, asimismo contra su casa armadora y contra la empresa fletadora, por la comisión de un posible delito previsto en los articulos 325 y siguientes del Codigo Penal, por los vertidos de Fueloil que a fecha de hoy han alcanzado las costas de diversos municipios que se encuentran bajo la jurisdicción de este Juzgado de Guardia.

Que solicita se requiera a la Cadena Ser de Vimianzo copia de la cinta del programa que de doce a una de hoy sabado 16 de Noviembre, realizó sobre el desastre ecologico en la Costa da Morte, con la intervención de equipos de Protección Civil y otras personas en las que se manifestaba expresamente que el fueloil habia alcanzado las costas de los concellos de Muxia, Camariñas, y Finisterre.

Por S.Sa. se le hace el ofrecimiento de las acciones del procedimiento a tenor de los articulos 109 y 110 de la Ley de Enjuicimiento Criminal, manifestando quedar enterado.

Asi lo manifiesta se aifrma y ratifica firma despues de S.Sa. y doy fe.

COURT OF THE FIRST INSTANCE AND TRIAL COURT
NUMBER TWO
CORCUBION (A CORUÑA)
Tel: 981 74 54 74

APPEARANCE OF CIPRIANO CASTREJE MARTINEZ

In Corcubión on the sixteenth of November two thousand and two, there appears before the Judge and me, the Secretary, the above-mentioned, of majority age, married, resident in Finisterre, with D.N.I. 76341357-X, who duly sworn in, states:

That he lodges a complaint against the Captain, First Officer and Chief Engineer of the tanker PRESTIGE, and against its owner and against the shipping company, for the commission of a possible crime established in articles 325 and subsequent of the Criminal Code, for the spills of fuel-oil which have to date reached the coasts of various towns under the jurisdiction of this Police Court.

That he requests that the Cadena Ser de Vimianzo be asked for a copy of the tape of the programme shown from twelve to one today, Saturday 16 November, on the ecological disaster on the Coast of Morte, with the involvement of Civil Protection teams and other people in which it was expressly stated that the fuel-oil had reached the coasts of the districts of Muxia, Camariñas and Finisterre.

He is offered the actions of proceedings in the context of articles 109 and 110 of the Law of Criminal Proceedings, stating that he has been informed.

Thus he states, confirms and ratifies and signs after You and I bear witness.

ADMINISTRACIÓN DE JUSTICIA

ADMINISTRACIÓN DE XUSTIZA

90470

JUZGADO DE INSTRUCCION Nº 4
A CORUÑA

C/MONFORTE S/N
Teléfono: xx
Fax: 981-185257
Número de Identificación Único: 15030 2 0404723 /2002

DILIGENCIAS PREVIAS PROC. ABREVIADO 2787 /2002 -L
SIN PROFESIONAL ASIGNADO
MANGOURAS APOSTOLOS

A U T O

En A CORUÑA a diecisiete de Noviembre de dos mil dos .

HECHOS

PRIMERO. Por los hechos a que se refieren las precedentes actuaciones, es decir, diligencias practicadas por la Policía Judicial de la Guardia Civil y denuncia de la Autoridad Portuaria de La Coruña sobre vertidos que producen graves riesgos, además con resultados muy negativos para la fauna y la flora, en relación con posible desobediencia, ha sido detenido MANGOURAS APOSTOLOS capitan del buque "PRESTIGE" y puesto a disposición de este Juzgado.

SEGUNDO. El detenido ha prestado declaración y se ha practicado la testifical igualmente acordada con el resultado que obra en autos. Se ha celebrado la audiencia que previene el art. 504 bis 2) de la Ley de Enjuiciamiento Criminal, con asistencia del representante del Ministerio Fiscal, del precitado detenido así como de su Letrado defensor.

RAZONAMIENTOS JURIDICOS

UNICO. Los hechos relatados que son objeto de la presente instrucción, presentan indicios, con la provisionalidad que pertenece a esta fase procesal de instrucción, del delito contra los recursos naturales y medio ambiente que regula el art. 325 y en su caso con el 326 del C.Penal, y también una presunta desobediencia a autoridad administrativa que se regula en el art. 556 de igual texto legal. De lo actuado aparecen indicios bastantes para creer como posible responsable criminalmente de tales hechos al citado Mangouras

ADMINISTRACIÓN DE JUSTICIA

ADMINISTRACIÓN DE XUSTIZA

Apostolos y teniendo en cuenta las penas señaladas en el Código Penal para dichos presuntos delitos, y formulada en la preceptiva audiencia la solicitud prevista en los artículos 504 bis 2) y 539 de la Ley de Enjuiciamiento Criminal, procede al amparo de lo dispuesto en los artículos 503 y 504 del mismo cuerpo legal, decretar respecto del antes citado encartado la medida cautelar consistente en la prisión provisional y comunicada con fianza.

Los indicios racionales que se desprenden de lo actuado se observan a través de la documental que obra en la instrucción y en particular a través del exhaustivo examen del testigo que depuso en la mañana de hoy. De todo lo cual se desprende que el buque "PRESTIGE" efectivamente fue objeto de un golpe de mar, circunstancias pues imprevisibles, y que dio lugar a una grave avería, pero a partir de ahí se sucedieron determinadas conductas que pudieran hallarse incriminadas penalmente como se ha referido en el párrafo anterior. Repetimos que todo hasta lo ahora practicado y la conclusión que procede extraer en la presente resolución , es muy provisional, lo que significa que exigirá de muchas otras actuaciones, pericias técnicas que conlleven a un mejor esclarecimiento de los hechos. Pero sí resulta desde ahora que el buque "PRESTIGE" no iba provisto de un remolque de emergencia, y si llevase dicho instrumento, éste no fue operativo; resulta también de la documenta, fruto de conversaciones grabadas, que el capitán del buque hizo caso omiso reiteradamente a las órdenes que fueron impartidas por las autoridades portuarias, impidiendo de ese modo una eficaz colaboración a efectos de disminuir los gravísimos riesgos, y que hoy son ya un resultado. Falta de colaboración que al parecer duró casi tres horas, y que inclusive continuó de una manera indirecta estableciendo dificultades o no poniendo los medios posibles tanto para lograr la eficacia del remolque del buque, o para ponerlo en marcha de modo que pudiera alejarse aunque fuera muy lentamente. Situaciones éstas que tuvieron lugar en el límite de las 24 millas y desde luego de las 200 millas que pertenecen al ámbito de las competencias que afectan a nuestro país. Es cierto como se ha dejado mencionado que es preciso contar con otros medios de investigación de ahí el Libro Diario de navegación cuya solicitud urgente se tiene formulada, además de contrastar todos los demás datos que resultan de las conversaciones al parecer con constancia gráfica en la torre de control marítimo de Finisterre.

No obstante todo lo anterior, atendiendo a las circunstancias la prisión provisional pudiera ser eludible con una fianza de tres millones de euros.

Esta medida cautelar entiende el Juzgado que está justificada en primer lugar porque los hechos que conoce la causa son graves y la pena prevista también es grave pero hay que tener en cuenta especialmente que la investigación está en fase de iniciación, la libertad del detenido pudiera entorpecer esa investigación, la alarma social no cabe duda que es de una trascendencia enorme, las responsabilidades además de las penales existen

ADMINISTRACIÓN DE JUSTICIA

ADMINISTRACIÓN DE XUSTIZA

también civiles que son de una gran transcendencia y de un elevado importe, esto unido a la absoluta falta de arraigo del detenido en nuestro país, a la facilidad de trasladarse fuera del territorio nacional y por lo tanto la posibilidad de eludir la acción de la justicia, hace necesario e ineludible al menos por el momento el adoptar la medida cautelar señalada, sin que sea posible sustituirla por otra menos gravosa, al menos por el momento insistimos.

@@16@

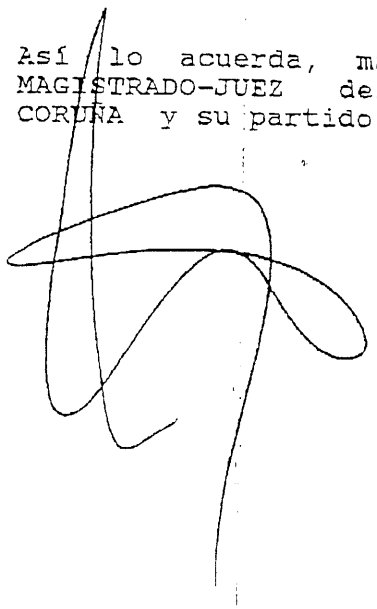
PARTE DISPOSITIVA

S.S. por anto mí, el Secretario, D I J O: se decreta la prisión provisional y comunicada, de la cual podrá librarse si presta fianza de TRES MILLONES DE EUROS, DE MANGOURAS APOSTOLOS como posible responsable de los presuntos delitos contra los recursos naturales y medio ambiente, y desobediencia a la autoridad administrativa. Podrá eludir la prisión si presenta la fianza en la cantidad establecida pero en este caso se constituirá la obligación de comparecer semanalmente por ante el Juzgado que conozca de la causa.

Notifíquesele esta resolución con entrega de copia e instrucción al detenido y al Ministerio Fiscal. Fórmese pieza separada de situación. Esta resolución no es firme y frente a ella cabe recurso de reforma ante este juzgado, que ha de interponerse en el plazo de TRES días.

PONGASE ESTA RESOLUCION EN CONOCIMIENTO DEL MINISTERIO FISCAL Y DEMAS PARTES PERSONADAS, previniéndoles que contra la misma podrán interponer, ante este Juzgado, RECURSO DE REFORMA en el plazo de TRES DIAS.

Así lo acuerda, manda y firma D. JESUS LOPEZ GARCIA , MAGISTRADO-JUEZ del Juzgado de Instrucción nº 4 de A CORUÑA y su partido.- Doy fe.



[2 Emblems] ADMINISTRATION OF JUSTICE

INVESTIGATING JUDGE'S COURT No 4
A CORUÑA

C/MONFORTE No. No.
Telephone: xx
Fax: 981-185257
Single Identification Number: 15030 2 0404723/2002

PRELIMINARY PROCEEDINGS. ABBREVIATED PROC. 2787/2002 - L
No lawyers allocated
Mangouras Apostolos

ORDER

In A CORUÑA, on seventeenth November two thousand and two.

FACTS

FIRST. MANGOURAS APOSTOLOS, Master of the vessel "PRESTIGE" has been arrested and placed at the disposal of this Court for possible contempt by reason of the facts to which the above proceedings refer, that is, the proceedings carried out by the Legal Police of the Civil Guard and the report from the Port Authorities of La Coruña concerning spillages involving serious risk and with very negative results for flora and fauna.

SECOND. The detainee has made a statement and the witness evidence which was ordered has been heard, with the result shown on the court files. The hearing provided for by Art. 504 A2) of the Law of Criminal Procedure has been held, in the presence of the representative of the Public Prosecutor's Office and also in the presence of the aforesaid detainee and his defence lawyer.

LEGAL GROUNDS

SINGLE. There is evidence, which can only be of a provisional nature at this stage of the proceedings, from the facts described which are the subject of this investigation, of an offence against natural resources and the environment, governed by Art. 325 and, where appropriate, Art. 326 of the Criminal Code and also of alleged contempt of an administrative authority, governed by Art. 556 of the same legal text. There is sufficient evidence in the proceedings so far to suggest that the aforesaid Mangouras Apostolos is likely to be criminally liable for these events. In view of the penalties provided in the Criminal Code for these alleged offences and since the application provided for in Articles 504 A2) and 539 of the Law of Criminal Procedure has been made at the obligatory hearing, under the provisions of Articles 503 and 504 of the same legal text, it is appropriate to order a precautionary measure of remand in custody with communication and bail in respect of the aforesaid accused.

The grounds for the evidence in the proceedings are to be found in the documentary evidence produced in the investigation and in particular in the detailed examination of the witness heard this morning. The evidence shows that the vessel "PRESTIGE" was in fact hit by a large wave, which was unforeseeable and caused serious damage but, after that, certain conduct took place which could be regarded as involving criminal liability, as has been stated in the preceding paragraph. We repeat that all proceedings to date and the conclusion to be drawn in this order are of a very provisional nature, which means that a lot of other proceedings will be required and expert evidence to further clarify the facts. But it is certainly clear that the vessel "PRESTIGE" did not have an emergency towline or, if she did have one, it was not operational. The documents also show, from recorded conversations, that the master of the vessel repeatedly ignored orders which were given by the port authorities, thus preventing efficient cooperation to diminish the very serious risks, which are now the actual outcome. This lack of cooperation seems to have lasted for almost three hours and even continued indirectly by raising objections and not using available means to make the vessel's tow line work or to render it operational so that she could move away, albeit very slowly. This situation occurred within the 24-mile limit and of course within the 200 miles which constitute the area of competence of our country. It is true, as has been said, that we need other methods of investigation and so an urgent request has been made for the Log Book and we also need to compare all the other information revealed in the conversations for which there appears to be recorded evidence in the maritime control tower of Finisterre.

Notwithstanding the above, in view of the circumstances, remand in custody could be avoided by bail of three million euros.

The Court believes that this precautionary measure is justified firstly because the facts involved in the case are serious and carry a heavy penalty but we must also consider in particular the fact that the investigation is only just starting, the liberty of the detainee could obstruct this investigation and the weight of public opinion is of enormous significance. Matters of civil liability are also involved as well as criminal liability and this is also of great significance and represents a large sum. Add to this the complete lack of any roots of the detainee in this country and the ease with which he could leave the national territory and thus have the possibility of avoiding the course of justice and it becomes necessary and unavoidable, at least at this stage, to adopt the precautionary measure suggested and there is no other less serious measure which could be used instead, at least for the moment.

PROVISIONS

His Honour, before myself the Clerk, STATED: it is ordered that MANGOURAS APOSTOLOS be remanded in custody with communication as allegedly liable for offences against natural resources and the environment and contempt of the administrative authorities but he may released if he provides bail of THREE MILLION EUROS.
He may avoid imprisonment if he provides bail in the amount stated but, in this case, he will have to appear each week before the Court hearing the case.

This order is to be served with a copy thereof and of the investigation on the detainee and on the Public Prosecutor's Office.
A separate part of the file concerning his situation is to be made. This is not a final order and an interlocutory appeal may be filed against it to this Court, within the period of THREE days.

THIS ORDER IS TO BE SERVED ON THE PUBLIC PROSECUTOR'S OFFICE AND OTHER PARTIES IN THE CASE and they shall be advised that they may file an INTERLOCUTORY APPEAL against it, within the period of THREE DAYS.

Thus given, ordered and signed by JESUS LOPEZ GARCIA, SENIOR JUDGE of Investigating Judge's Court No. 4 of A CORUÑA and the district thereof. I certify thereto.

[Illegible signature]